HD3800 Series

User Manual

This Manual applies to the following VGAs:

- **HD3870XTG4 (PCI Express)**
- **HD3850PG3 (PCI Express)**
- **XHD3870XTG4 (PCI Express)**
- **XHD3870XTG3 (PCI Express)**
- **XHD3850PG3 (PCI Express)**
- **HD385P3 (PCI Express)**
- **HD383P3 (PCI Express)**
- **XHD3870X2 (PCI Express)**
- **XHD3850X2 (PCI Express)**
- **HD3870X2 (PCI Express)**
- **HD385XT3 (PCI Express)**
- **RX385PA3 (AGP Bus)**
- **HD 3800 Series (CrossFire Edition)**

Table of Contents

CHAPTER 1 INTRODUCTION.....1
1.1 System Requirements..... 3
1.2 Performance..... 5
1.3 Software Compatibility..... 5
1.4 Monitor Compatibility..... 6

CHAPTER 2 HARDWARE INSTALLATION.....7
2.1 What's Included in the Package 7
2.2 Installing the Card..... 7
2.3 Board Layout..... 9
2.4 Power Supply Requirements 23
2.4.1 Additional Power Connection Requirements 23
2.5 Multiple Monitors 27
2.6 ATI Radeon™ HD 3800 Display Configurations..... 29

CHAPTER 3 SOFTWARE INSTALLATION 30
3.1 Uninstall Old Graphics Drivers..... 31
3.2 Installing on Windows XP..... 32
3.3 Installing on Windows Vista..... 34
3.4 Displays Manager 39
3.5 Displays Manager Standard View..... 40
3.6 Displays Manager Advanced View..... 42
3.6.1 Enable Clone Mode..... 42
3.6.2 Enable Stretch Main Vertically 43
3.6.3 Enable Stretch Main Horizontally.....43
3.6.4 Swap displays in Extended Mode 44
3.6.5 Change desktop size..... 45
3.6.6 Change Color quality 45
3.6.7 Change display refresh Rate 45
3.6.8 Force changes to a specific display setting..... 46
3.6.9 Detect a newly connected display device..... 46

3.7 Display Options 48
3.8 Using the CRT/TV Features 51
3.8.1 How to use TV-out cables correctly 51
3.8.2 How to change the TV settings 52
3.8.3 TV Properties 54
3.8.4 TV Adjustments 55
3.8.5 To select your TV format by country 56
3.8.6 To set your TV output to PAL 57
3.9 Using the HDTV Features 58
3.9.1 Installing your ATI HDTV video cable 58
3.9.2 Using your ATI HDTV video cable 58
3.9.3 HDTV Support 59
3.9.4 Add an HDTV format 60
3.10 Color Desktop 63
3.11 ATI Overdrive (optional) 65
3.12 HDMI Video and Audio (optional) 68

APPENDIX A SPECIFICATIONS 69
A.1 Hardware Specifications 69
A.2 Programming Information 71
A.3 Resolution Table 71

Radeon™ HD 3800 CrossFire™ Edition 77

CHAPTER 1
INTRODUCTION

The ATI Radeon™ HD 3800 Series of GPUs allow you to experience the power of HD with graphics processing designed for how you work and play. Advance to the next generation of HD game performance and life-like realism thanks to DirectX® 10.1 capabilities and plug-and-play ATI CrossFireX™ multi-GPU upgradeability. Watch the latest Blu-ray and HD-DVD videos in full 1080p HD – and upscale beyond - without placing huge demands on your CPU. Enjoy break-through efficiency with more processing performance per watt and energy-saving features to help save you money.

Features

- ATI Radeon™ HD 3800 Series
- Superscalar unified shader architecture
- Microsoft® DirectX® 10.1 support
  - Shader Model 4.1
- PCI Express 2.0 x16 bus interface
- Anti-aliasing features
  - Multi-sample anti-aliasing (2, 4, or 8 samples per pixel)
  - Up to 24x Custom Filter Anti-Aliasing (CFAA) for improved quality
  - Super AA (ATI CrossFire™ configurations only)
- ATI CrossFireX™ multi-GPU support for highly scalable performance
  - Use up to four GPUs with an AMD 790FX based motherboard
- High-speed 128-bit HDR (High Dynamic Range) rendering
- ATI Avivo™ HD video and display technology
- Built-in HDMI and 5.1 surround audio
- Unified Video Decoder (UVD) for Blu-ray™ and HD DVD

- ATI PowerPlay™ energy conserving technology
- Dynamic geometry acceleration
- Game physics processing capability
- OpenGL 2.0 support
- Native HDCP (High-bandwidth Digital Content Protection)

❖ DVI-to-HDMI dongle **(optional)**

❖ Flex cable for ATI Radeon™ HD 3800 Series **(optional)**

ATI Avivo™ HD Video and Display Platform

- Dedicated unified video decoder (UVD) for H.264/AVC and VC-1 video formats
  - High definition (HD) playback of both Blu-ray and HD DVD formats
- Hardware MPEG-1, MPEG-2, and DivX video decode acceleration
  - Motion compensation and IDCT
- Two integrated 400 MHz 30-bit RAMDACs
  - Each supports analog displays connected by VGA at all resolutions up to 2048x1536
- MPEG-2, MPEG-4, DivX, WMV9, VC-1, and H.264/AVC encoding and transcoding

ATI CrossFireX™ Multi-GPU Technology

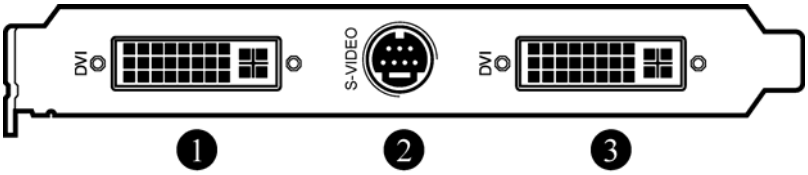
- Scale up rendering performance and image quality with two, three, or four GPUs
- Integrated compositing engine
- High performance dual channel bridge interconnect

1.1 System Requirements

Hardware	• Intel® Pentium® 4 or AMD Athlon®. • 1GB of system memory • Optical drive for installation software (CD-ROM or DVD-ROM drive). • A 500 watt or better power supply with 750 Watt 6-pin PCIe power connector.
Operating System	• Windows® XP with Service Pack 2 (SP2). • Windows® XP Professional x64 Edition. • Windows® Vista Ready.
Monitor	• High-resolution MultiSync or multi-frequency monitors or any other type of VGA monitor. • Digital flat-panel (DFP) displays or digital CRT display.
ATI CrossFire™ Requirements	To implement an ATI CrossFireX™ configuration using the ATI Radeon™ HD 3800 Series, requires: • An ATI CrossFireX™ certified motherboard with two (2) PCI Express® x16 slots and correct PCIe™ chipset driver. • A second ATI Radeon™ HD 3800 Series graphics card. • One ATI CrossFireX™ internal bridge interconnects. • A specialized PCI Express® 550 watt or greater power supply. Consult your computer system manual to ensure the power supply is designed to accommodate a high-end graphics card with a peak dissipation above 150 watts.

Connections

The following illustrates the connections on the ATI Radeon™ HD 3800 Series graphics card.



ATI Radeon™ HD 3800 Series Connections

1. DVI-I Dual Link
2. S-Video Connection
3. DVI-I Dual Link (HDMI™-compatible)

1.2 Performance

The **ATI Radeon™ HD 3800** series is a graphics accelerator card. Computer functions like disk access and numerical calculation are not accelerated by the **ATI Radeon™ HD 3800** series. It is not unusual to obtain an overall system speed increase of 2 times for graphics-heavy applications after installing the **ATI Radeon™ HD 3800** series. The speed of pure graphics operations, like dragging objects with a mouse, scrolling, and resizing, will be remarkably improved.

1.3 Software Compatibility

The key function of the **ATI Radeon™ HD 3800** series is its VGA compatibility. Unlike coprocessor-based, or IBM® 8514A-type display cards, the **ATI Radeon™ HD 3800** series is 100% compatible with your DOS computer. This means that all DOS software will run correctly with the **ATI Radeon™ HD 3800** series VGA without modification.

The VGA compatibility includes backward compatibility with the EGA, CGA and MDA standards. All DOS software will include drivers for at least one of these display types and will be fully compatible with the **ATI Radeon™ HD 3800** series. The **ATI Radeon™ HD 3800** series is also fully compatible with VESA BIOS extensions for resolutions higher than 640x480.

When the **ATI Radeon™ HD 3800** series is used in VGA, backward compatibility, the graphics engine of the **ATI Radeon™ HD 3800** series card is not used. The speed in these modes will be comparable to the fastest type of standard VGA card.

1.4 Monitor Compatibility

The **ATI Radeon™ HD 3800** series will work with any VGA, Super VGA or Multisync monitor.

Super VGA monitors can support IBM® standard VGA plus the 800x600 extended mode used by most VGA cards, and the 1024x768 interlaced mode used by most VGA cards and the IBM® 8514A.

Multisync monitors are more expensive and will work at all Super VGA resolutions plus additional higher resolutions or refresh rates. The most useful multisync monitor specification for determining maximum resolution and refresh capability is the horizontal frequency range. For PC use, the lower limit of the range must be no less than 30KHz. The upper limit is usually 48K Hz, 57K Hz or 64K Hz. These correspond to a maximum resolution of 1024 x 768, 60 Hz refresh, 1024 x768, 72 Hz refresh rate; and 1280x1024, 60 Hz refresh rate, respectively.

By default, the **ATI Radeon™ HD 3800** series will drive your monitor at a screen refresh rate of 60 Hz. In other words, it repaints the screen 60 times per second. If the screen is not displayed properly when you boot your system, your monitor may not support the refresh rate for the resolution chosen. In this case, you must either lower the resolution to one that can be supported at 60Hz or lower the refresh rate. The maximum refresh rate supported by your monitor is specified with the Refresh Rate utility.

Refer to your manual for information on the monitor's capabilities. If you are not sure what refresh rate is supported, you can always try a higher rate. If the screen looks good, the rate is supported (and will be easier on your eyes).

CHAPTER 2
HARDWARE INSTALLATION

2.1 What's Included in the Package

The VGA card package includes the following:
1. VGA Card
2. Software CD which contains the necessary files
3. This User manual

2.2 Installing the Card

1. Unplug the computer and remove the cover.

Shut down the computer, then turn off the power supply and any attached equipment (such as a monitor or printer).

Unplug the power cord.

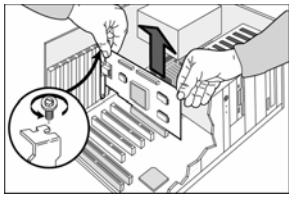
Remove the cover.

2. Remove the current graphics card.

If there is a graphics card currently in the computer, use the following guidelines to remove it:

Detach any cables which are attached to the current graphics card and remove the bracket screw locking the card down.

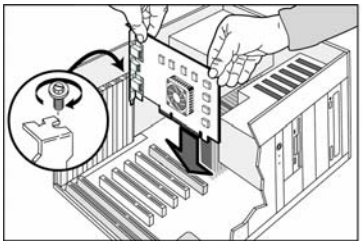
Check and release any PCI Express retainer mechanism before removing the display adapter card.



Grasp the card by the edges and pull it straight out of the motherboard slot. If the card sticks in the slot, rock it gently from end to end to dislodge it. Remember to save the screw.

Note: If the computer has a graphics chip soldered down on the motherboard, refer to the manual for the system or motherboard for information on how to disable it.

3. Insert the Graphics Accelerator card.



Locate the empty PCI Express socket on the motherboard and use the following instructions to insert the **ATI Radeon™ HD 3800** Graphics Accelerator card into that socket:

Grasp the **ATI Radeon™ HD 3800** Graphics Accelerator card by its edges.

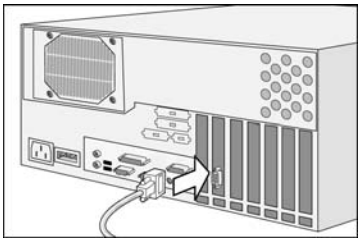
Align it with the empty PCI Express socket on the motherboard, and gently insert it into place.

Make sure that the card is pressed evenly and completely into the socket.

Fasten the card with the bracket screw.

Note: Use the figure above to help locate the PCI Express (PCIe) socket on your motherboard. The exact configuration of the components on your motherboard may differ from the figure. Look for a single, smaller socket between the set of PCI sockets and the processor.

4. Reconnect all cables and replace the cover.

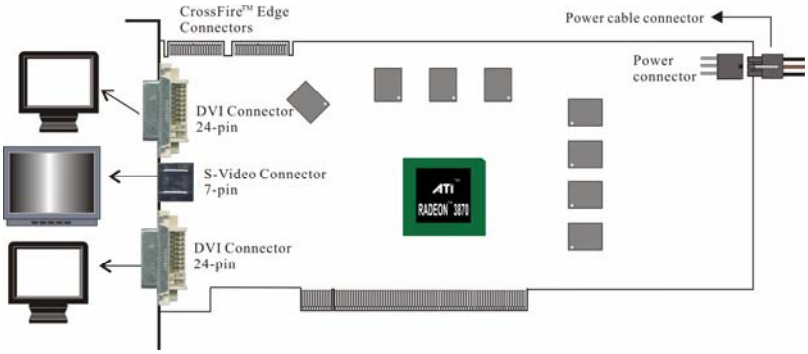


Plug the cable from your computer monitor into the back of the **ATI Radeon™ HD 3800** Graphics Accelerator card. Make sure it is securely fastened.

Carefully replace the computer cover and plug the power cord back in.

2.3 Board Layout

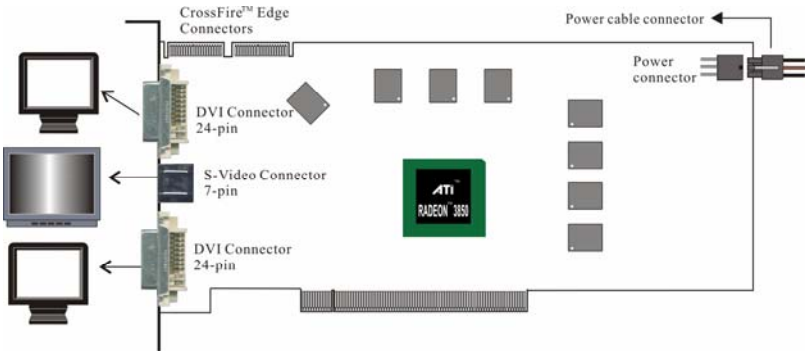
■ HD3870XTG4



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

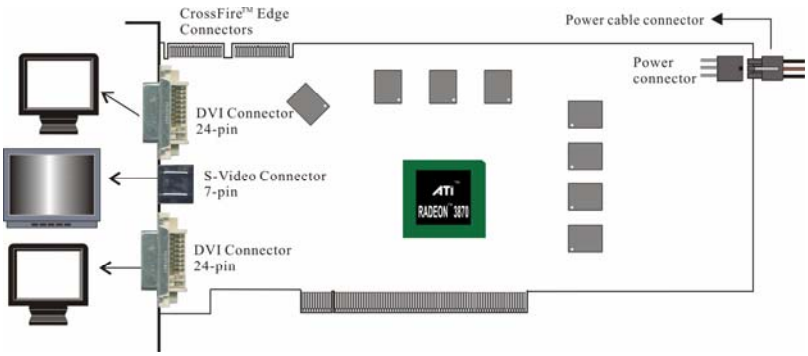
■ HD3850PG3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

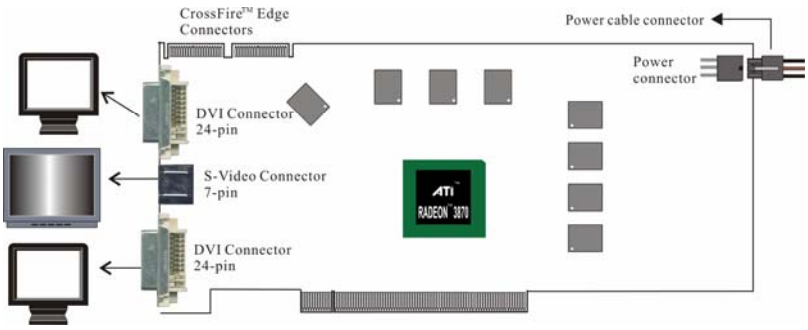
■ XHD3870XTG4



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

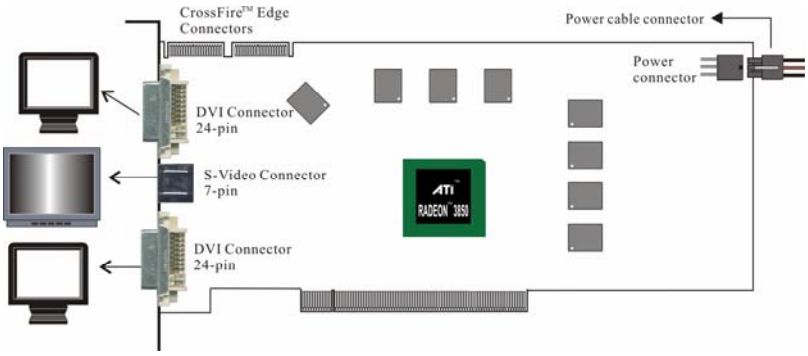
■ XHD3870XTG3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

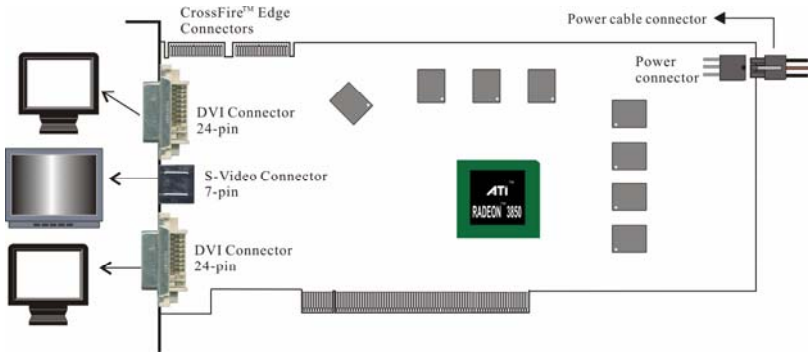
■ XHD3850PG3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

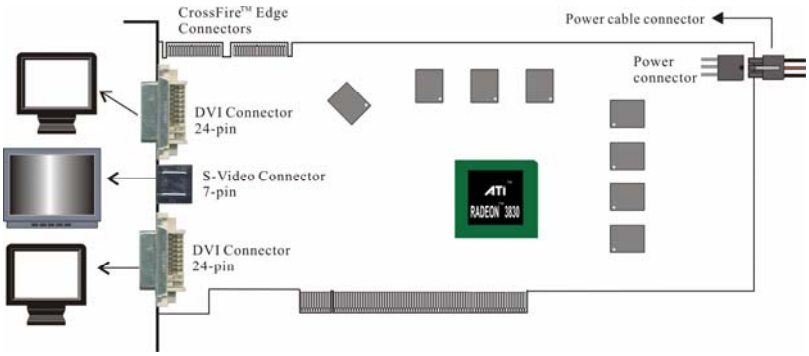
■ HD385P3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

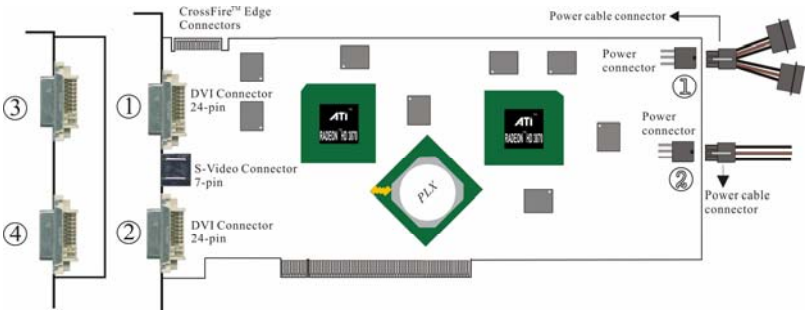
■ HD383P3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

■ XHD3870X2

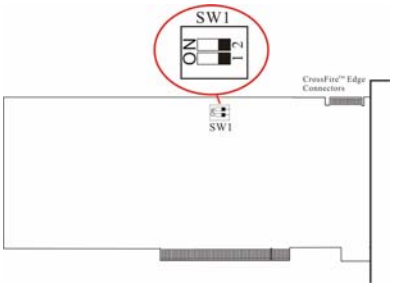


System Requirements

CrossFire™ technology works on AMD 790FX, AMD 790X, Intel 975X, P965, P35 and X38 motherboard.

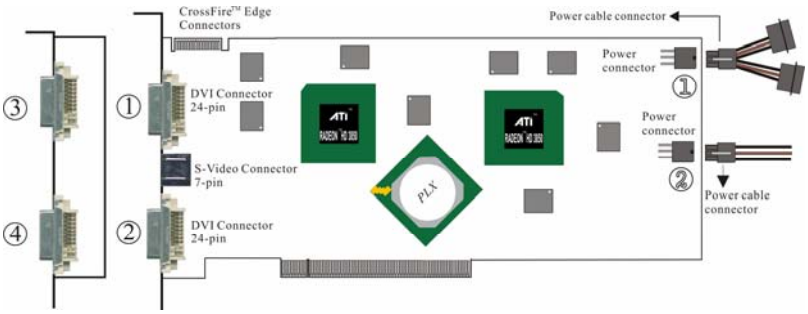
Note:

- Specialized PCI Express® 550 watt or greater power supply recommended.
- A 1000 watt or greater power supply is required for CrossFire™.
- Only DVI **1** and DVI **3** can boot up system.
- Power connector 1 and 2 connected to power supply unit simultaneously is recommended. Only power connector 1 or 2 connected to power supply unit can boot up the system but system will shut down randomly.
- 6pin to two-4pin external power cable should be connected to different power supply cable simultaneously.
  or
- use power supply 6pin cable (note, power supply cable is 6-wire, not 3-wire)



Some specific motherboard with Award BIOS may encounter problem in driver installation, please update motherboard BIOS to the latest version, if the problem remained please adjust the switch (SW1) to the **"ON"** in back of the card, then uninstall and reinstall the driver.

■ XHD3850X2

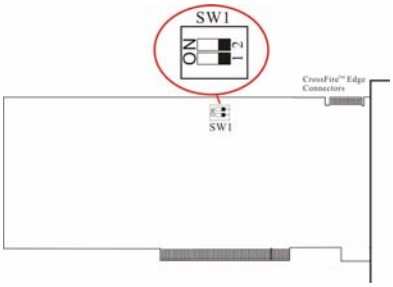


System Requirements

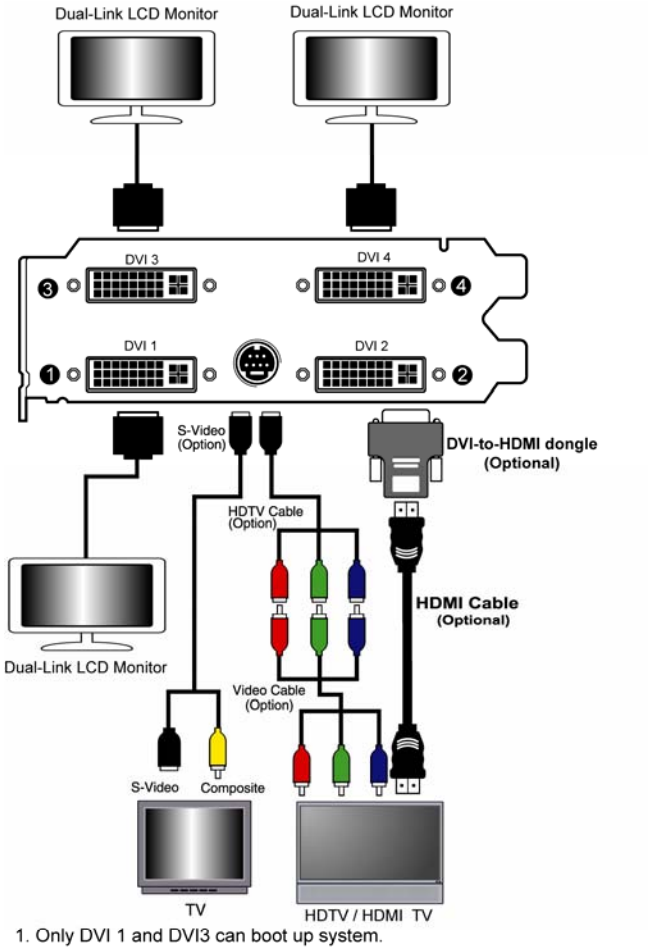
CrossFire™ technology works on AMD 790FX, AMD 790X, Intel 975X, P965, P35 and X38 motherboard.

Note:

- Specialized PCI Express® 550 watt or greater power supply recommended.
- A 1000 watt or greater power supply is required for CrossFire™.
- Only DVI **1** and DVI **3** can boot up system.
- Power connector 1 and 2 connected to power supply unit simultaneously is recommended. Only power connector 1 or 2 connected to power supply unit can boot up the system but system will shut down randomly.
- 6pin to two-4pin external power cable should be connected to different power supply cable simultaneously.
  or
- use power supply 6pin cable (note, power supply cable is 6-wire, not 3-wire)



Some specific motherboards with Award BIOS might encounter problem in graphic card driver installation or operation, please update motherboard BIOS to the latest version. If the problem persist, please adjust the switch SW1 (SW1-no1 and SW1-no2 both) provided on the back of the graphic card to the **"ON"** to work. Then uninstall and reinstall the graphic card driver.

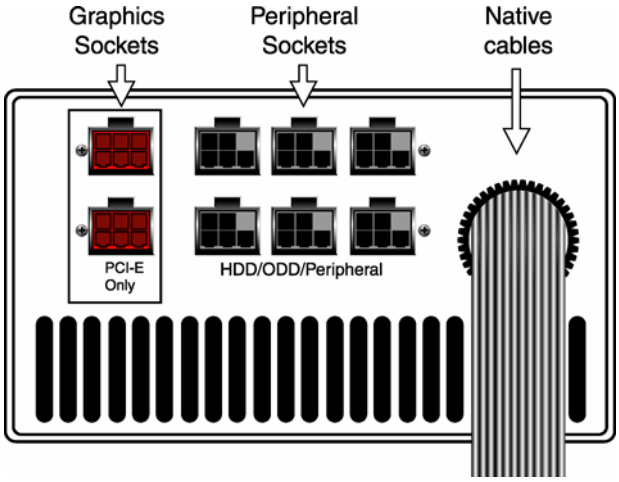


1. Only DVI 1 and DVI3 can boot up system.
2. DVI 1 and DVI 3 can support clone and extension mode.
3. DVI 2 and DVI 4 only can support extension mode.
4. Only DVI 1 and DVI3 can display when self CrossFire™ enabled.
5. TV-Out and DVI-I to VGA (DVI 1) can not output simultaneously.
6. All DVI port can support DVI-to-HDMI dongle, and only one HDMI display can support at the same time. (ex. 3 LCD monitor and 1 HDMI TV)

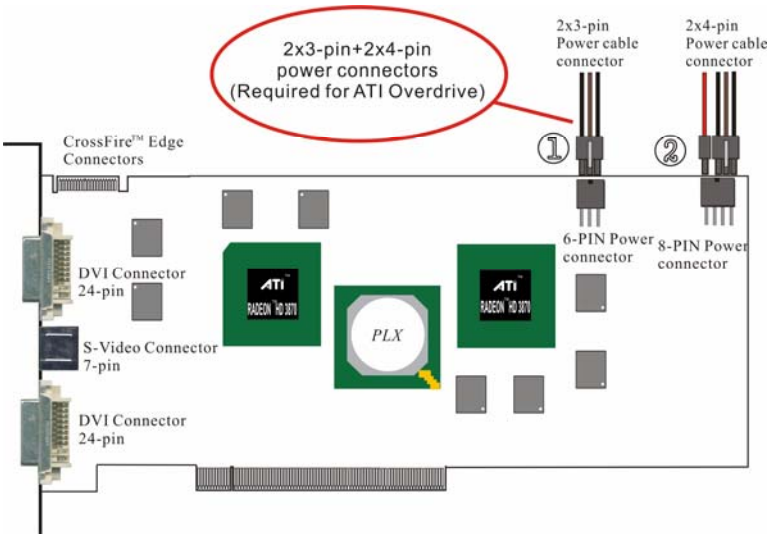
Using a module type power supply to run crossfire mode with two HD3850X2/HD3870X2 graphic card, it requires 4PCS PCI-E 6-pin power cable connections.

Please be informed that the 4PCS PCI-E 6-pin power cable connections must be provided by two separated power source of the power supply.

As the illustration the first HD3850X2/HD3870X2 graphic card has 2PCS PCI-E 6-pin power cable connections from the native power cable part of the power supply, then the second HD3850X2/HD3870X2 graphic card has another 2PCS PCI-E 6-pin power cable connections from the extension PCI-E power cable module.



■ HD3870X2



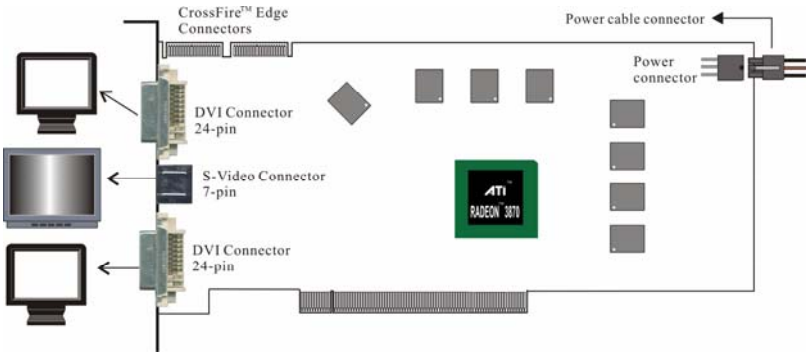
System Requirements

CrossFire™ technology works on AMD 790FX, AMD 790X, Intel 975X, P965, P35 and X38 motherboard.

Note:

- Specialized PCI Express® 550 watt or greater power supply recommended.
- Power connector 1 and 2 connected to power supply unit simultaneously is recommended. Only power connector 1 or 2 connected to power supply unit can boot up the system but system will shut down randomly.

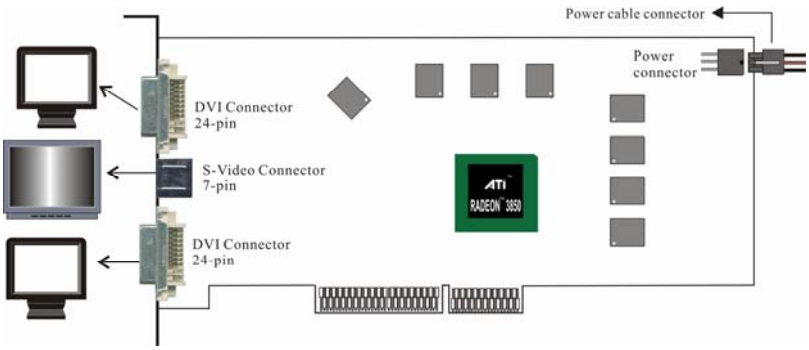
■ HD387XT3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- A 550 watt or greater power supply is required for CrossFire™.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

■ RX385PA3



Note:

- Specialized PCI Express® 500 watt or greater power supply recommended.
- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire).

2.4 Power Supply Requirements

Power supplies with 500-Watt capacity and 30A current on 12V rail is recommended for single ATI Radeon™ HD 3800 series product.

ATI Radeon™ HD 3800 CrossFire configurations (dual graphics card system) requires 550-Watt capacity power supply, with 38A on 12V rail.

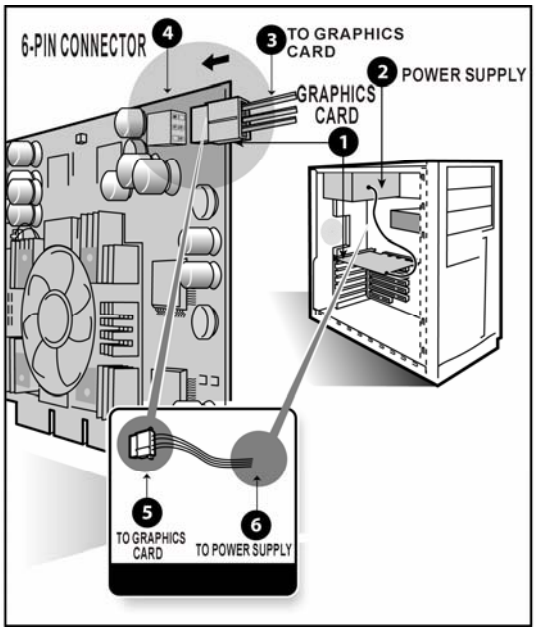
Please consult your power supply vendor specifications to ensure your system meets the recommended functionality. CrossFire™ configurations require a CrossFire™ compliant motherboard, which includes two physical x16 PCI Express® slot interfaces.

2.4.1 Additional Power Connection Requirements

Note:

- use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire)

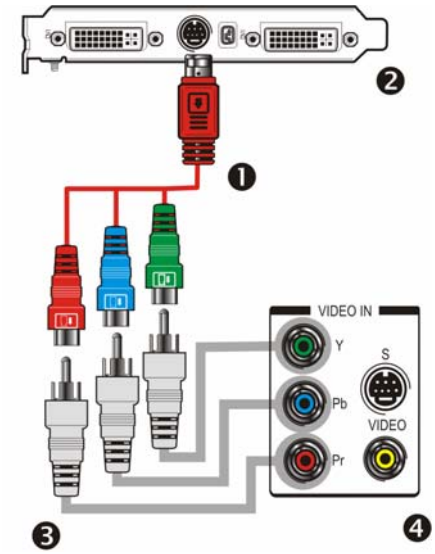
1. The ATI Radeon™ HD 3800 series must be connected to the computer's power supply.



2. Remove the power cable from the hard drive
3. Connect ❸ of the power extension cable to the graphics card power connector as shown.
4. Connect ❻ to the power supply connector
5. After locating the PCI Express (or AGP) slot, and if necessary, removing the metal cover:
   - Align your ATI Graphics Accelerator card with the PCI Express (or AGP) slot
   - Press it in firmly until the card is fully seated.
6. Replace the screw to fasten the card in place, and replace the computer cover
7. Plug the monitor cable into your card
8. Turn on the computer and monitor

HDTV uses YPbPr connector to receive input. YPbPr stands for the following:

- **Y= Green**
- **Pb= Blue**
- **Pr=Red**



ATI HDTV Cable (Optional)

❶ ATI HDTV Video Output Cable

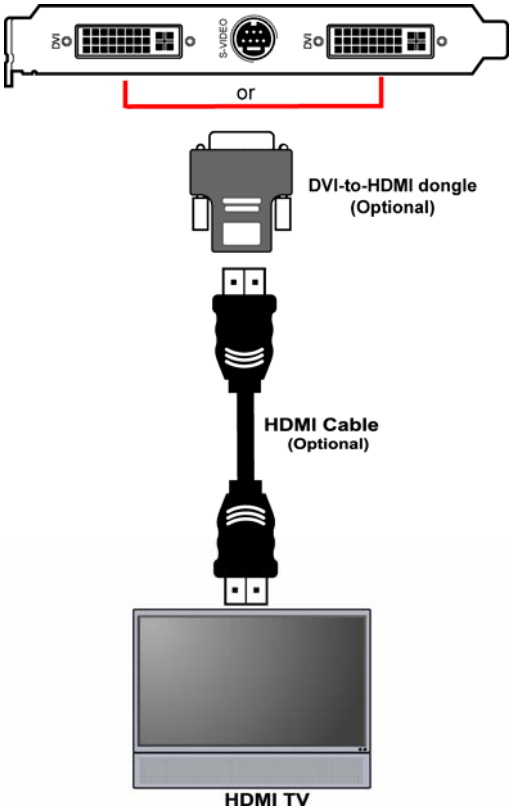
❷ Backplate of the ATI Graphics Card

❸ Male RCA Patch Cable – available from consumer electronics dealer

❹ Typical HDTV Video Input Connections

Note: Input and output cables lengths should not exceed 50 feet (15m).

Connecting your DVI-to-HDMI dongle (optional)



2.5 Multiple Monitors

Your **ATI Radeon™ HD 3800** series provides dual display functionality and TV Out from a single video card. This new technology changes the way you view your PC, TV, and video graphics.

The **ATI Radeon™ HD 3800** series uses HydraVision™ software to create a seamless multiple display desktop. Multiple monitor display works as one large work area. A single application can span all monitors, or many applications can occupy their own specific monitor. This feature will take your PC's graphics and video capabilities to the next level.

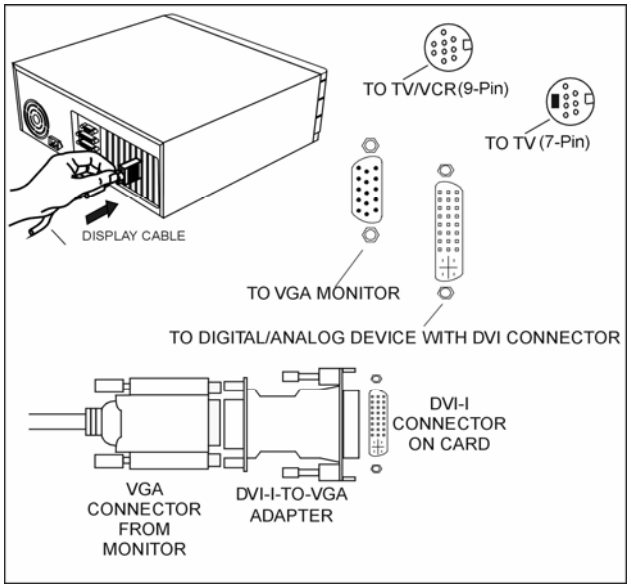
Connecting your ATI Radeon™ HD 3800 to your monitors

The ATI Radeon™ HD 3800 series provides support for two DVI-I monitors or two VGA monitors using the supplied DVI-I-to-VGA adapter. A television can also be used to expand your desktop by using the S-Video connector.

Plug the monitor cable into your card (if you are running multiple monitors, connect their cables to the appropriate connectors), then turn on the computer and monitor(s).

To connect a flat panel to the **ATI Radeon™ HD 3800** series use the DVI-I connector as shown on the following page. To connect a VGA monitor to the DVI-I connector, plug the supplied DVI-I-to-VGA adapter into the DVI-I connector, then plug your monitor cable into the adapter.

When you use multiple monitors with your **ATI Radeon™ HD 3800** series, one monitor will always be primary. Any additional monitor(s) will be designated as secondary.


TO TV/VCR (9-Pin)
TO TV (7-Pin)
DISPLAY CABLE
TO VGA MONITOR
TO DIGITAL/ANALOG DEVICE WITH DVI CONNECTOR
DVI-I CONNECTOR ON CARD
VGA CONNECTOR FROM MONITOR
DVI-I-TO-VGA ADAPTER

2.6 ATI Radeon™ HD 3800 Display Configurations

The following table lists the different ways you can connect displays to your card.

Display Configuration	Connector(s) Used	Comments
Single CRT display	DVI-I connector with DVI-I-to-VGA adapter	CRT-Cathode ray tube analog display.
Single DFP display	DVI-I connector	DFP- digital flat panel display.
Single TV	S-Video out	The S-Video out can also support a composite connection via the S-Video-to-Composite adapter.
Single HDTV display	S-Video out to HDTV (YPrPb) cable	HDTV - High Definition Television
Single HDTV HDMI™ display	DVI-to-HDMI™ connector and HDMI cable	The ATI Radeon™ HD 3800 Series supplies both audio and video signals to the bottom port on the HDMI™ DTV.
CRT display + HDTV	DVI-I connector with DVI-I to VGA adapter + S-Video out to HDTV (YPrPb) cable	
DFP display + TV	DVI-I connector + S-Video out cable	
DFP display + HDTV	DVI-I connector + S-Video Out to HDTV (YPrPb) cable	
CRT display + DFP display	DVI-I connector with DVI-I to VGA adapter + DVI-I connector	
CRT display + CRT display	DVI-I connector with DVI-I to VGA adapter + DVI-I connector + S-Video Out cable	The TV display will “clone” the image of one of the other two displays
CRT display + DFP display + HDTV	DVI-I connector with DVI-I to VGA adapter + DVI-I connector + S-Video Out to HDTV (YPrPb) cable	

Note:*Both DVI ports support dual-link DVI output compatible with single-link DVI flat panel displays as well as ultra-high resolution dual-link DVI flat panel displays.*

CHAPTER 3
SOFTWARE INSTALLATION

The **ATI Radeon™ HD 3800** series is 100% VGA compatible and as such needs no special display drivers to run application software correctly at standard VGA resolutions and color depths. However, enhanced display drivers are supplied with the VGA card because they provide accelerated performance, higher color depths and higher resolutions for software applications. The card supports resolutions up to 2048x1536, and color depths of up to 32 bits per pixel. Higher graphics resolutions and higher color depths provide greater clarity and detail when using the supplied drivers for graphics programs.

Notes:

- Please uninstall any existing video drivers that could possibly create a conflict before attempting to install this display card.
- Please install the driver provided by the motherboard company before you install the display driver.
- For software MPEG support Windows XP, you must install DirectX® 9.0C (or later version) first.

3.1 Uninstall Old Graphics Drivers

To ensure successful installation of the graphics card driver, you must uninstall the graphic drivers for the existing graphics card before removing it from the computer.

Windows® XP: Uninstall old graphics drivers

1. With your current graphics card still in your computer, close all open applications.
2. Click **Start > Settings > Control Panel**, then select **Add/Remove** Programs.
3. Select your current graphic drivers, then click **Add/Remove**.

   • The Wizard will help you remove your current display drivers.

   Note: If the previously installed graphics card has any additional software installed, it may also need to be removed at this point. For example, DVD Player or Multimedia applications.
4. Shutdown your system after the drivers have been removed.

Windows Vista™: Uninstall old graphics drivers

1. With your current graphics card still in your computer, close all open applications.
2. From the Windows® desktop, click **Start**, then select **Control Panel**.
3. Double-click **Programs and Features**, then select your graphics drivers from the list of software programs.
4. Click the **Uninstall** button.
5. If the **Programs and Features** uninstall confirmation dialog appears, click **Yes**.

   Note: If the previously installed graphics card has any additional software installed, it may also need to be removed at this point. For example, DVD Player or Multimedia applications.

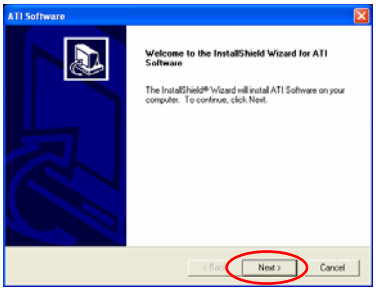
3.2 Installing on Windows XP

Caution:
The Catalyst® Control Center requires that **Microsoft's .NET Framework Version 2.0** be installed. Without .NET Version 2.0 installed the Catalyst® Control Center will not launch properly, and the user will see an error message as a result.

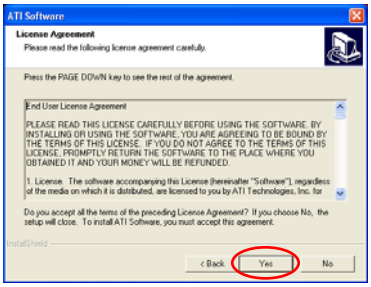
http://msdn2.microsoft.com/en-us/netframework/default.aspx

● Microsoft .NET Framework Version 2.0 Redistributable Package

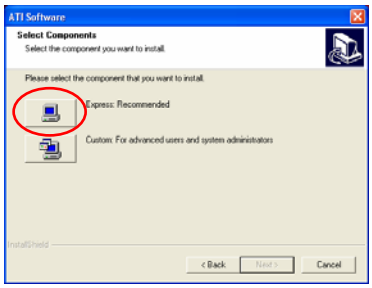
1. Start Windows.
2. When Windows detects your graphics card, the **Found New Hardware Wizard** dialog box appears.
3. Click **Cancel** to enter the Windows desktop.
4. Insert the CD installation disc into your CD-ROM drive.
5. The CD should Autorun and the following screen will appear.
   *Note: if the CD does not autorun click on "**Start**", then "**Run**", then type in "**D:\ATISETUP.EXE**" and click "**OK**".*
   (If D is not your CD-ROM drive, substitute D with the correct drive letter.)
6. Click on "**ATI Easy Install"** to begin the Installation Wizard.
7. When the Welcome box appears, click on the "**Next**" button to go to the next step.


ATI Software
Welcome to the InstallShield Wizard for ATI Software
The InstallShield® Wizard will install ATI Software on your computer. To continue, click Next.
< Back
Next >
Cancel

8. The License Agreement dialog box appears. Click on "**Yes**" button.


ATI Software
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
End User License Agreement
PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY INSTALLING OR USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE, PROMPTLY RETURN THE SOFTWARE TO THE PLACE WHERE YOU OBTAINED IT AND YOUR MONEY WILL BE REFUNDED.
1. License. The software accompanying this License (hereinafter "Software"), regardless of the media on which it is distributed, are licensed to you by ATI Technologies, Inc. for
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install ATI Software, you must accept this agreement.
InstallShield
< Back
Yes
No

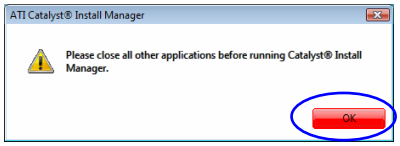
9. The Select Components dialog box appears. Click on "**Express**" button.



10. When the Windows SETUP has completed copying the files to the computer, Windows will prompt you to restart. Click the **"Yes"** option and then click the "**Finish**" button.

3.3 Installing on Windows VISTA

1. Install the VGA card drivers from the ATI Installation CD-ROM by doing one of the following:
   • Start > Run > X:**VISTA\SETUP.EXE** (where X is the drive letter of your CD-ROM drive).
2. When executing the CIM from the setup.exe command, the user will see the following User Interface windows and dialogs.



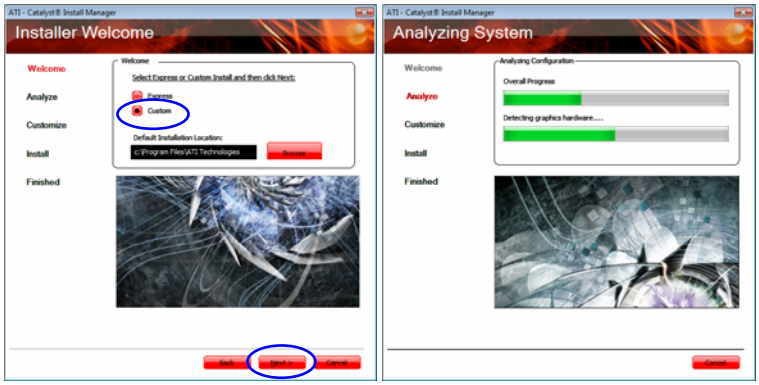
3. The warning dialog window cannot be suppressed. The Catalyst splash screen can be customized.

4. The User is able to select and change the default language displayed by the UI. If the User chooses to only support one language, the default language is listed in the welcome page and is installed.

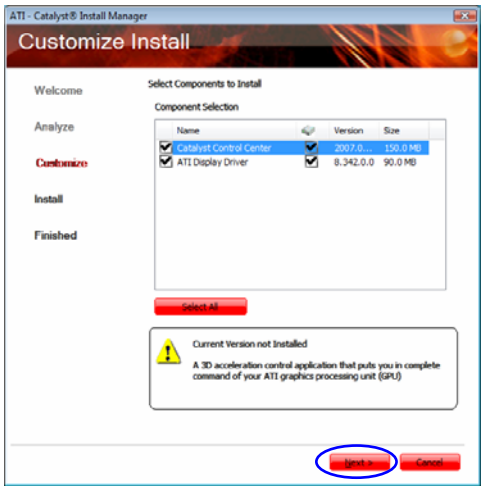
5. Clicking the Customized language button enables the CIM to install localized resources and help files various packages.

Note: Customized languages must be selected by placing a checking off the required languages.

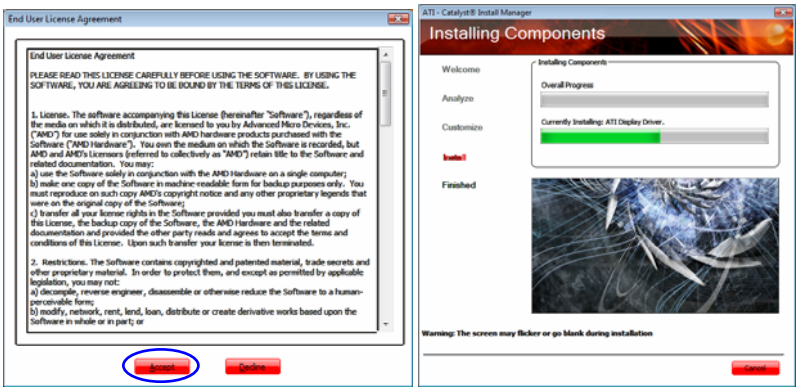
6. On a clean system, the Installer welcome screens allow the user to select the install method. Selecting Express and then next the UI and CIM will select and install the best set of software for the detected hardware. Selecting Express the user will be prompted to select the software packages to install. Once the install method is selected, the Detection phase commences. During this phase the CIM is gathering system information to best determine which packages to install.



7. During an express install, the only other window the user needs to interact with is the End User License Agreement (EULA). Once this has been approved the install will commence. During an express install, the user must first select the packages to install and potentially select the source location. The install components progress window displays both the overall progress of the entire process and the install of each package (lower progress bar).



Note: The UI does not show all the packages that are installed in the system. Some of the packages are invisible to the UI. The CIM and MS Visual C++ 8 runtime are two of these packages. These packages are required whenever any ATI package is selected for install onto an end users system. The CIM is required as it is the central software suite that manages the install/uninstall and update of the package/packages installed.


End User License Agreement
End User License Agreement
PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE.
Accept
Decline
ATI - Catalyst® Install Manager
Installing Components
Welcome
Analyze
Customize
Finished
Installing Components
Overall Progress
Currently Installing: ATI Display Driver.
Warning: The screen may flicker or go blank during installation
Cancel

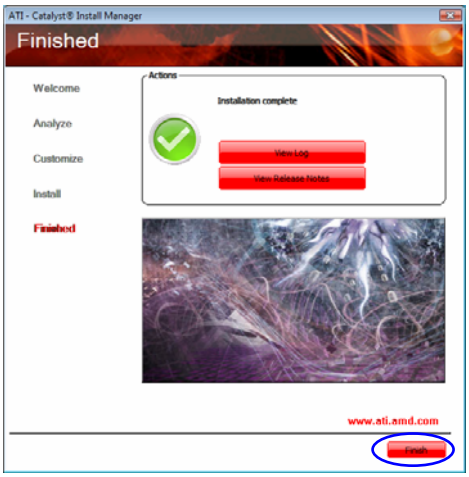
8. Final status Once the install process is complete, the Finished page will show the status of the install. The page will display one of the following:

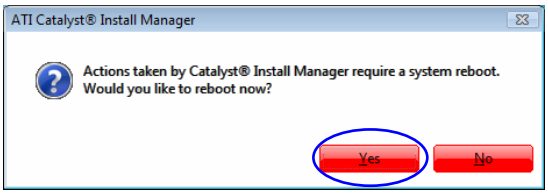
   - **For a successful install there is a green checkmark in the actions window**

   The Log file details information on the HW and packages that were detected in the system. The release notes are accessed via the View readme button.

9. Close and reboot dialogs Typically a restart message is displayed. This message is displayed when the following conditions are met.

   - During a driver install the OS request a reboot
   - During an application install, if the install package was authored and an install requested for functionality to be enabled. Most Vista software does not require a reboot.




ATI Catalyst® Install Manager
Actions taken by Catalyst® Install Manager require a system reboot.
Would you like to reboot now?
Yes
No

3.4 Displays Manager

The Displays Manager is the central location for configuring your display devices and arranging your desktop. Use the Displays Manager to quickly change your display setup, arrange your desktop in a multi-monitor environment, and enable TV Out.

Those new to the Catalyst® Control Center can use the Basic View wizard to help configure the display preferences. Experienced users who prefer to manually configure their desktop setting should use the Advanced View.

Access Displays Manager Standard View

1. Click the **View** button to switch to Standard View.
2. From the menu pane, click **Displays Manager** to display the settings view.

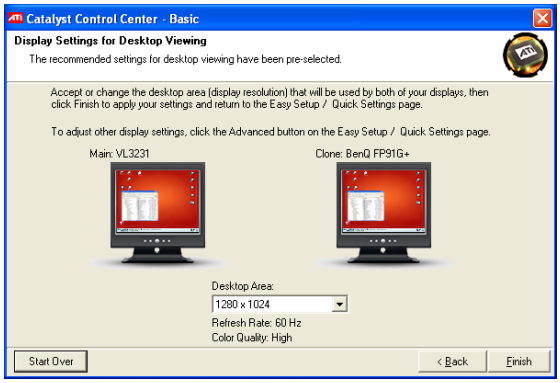
Enable Displays Manager Advanced View

1. Click the **View** button to switch to Advanced View.
2. From the menu, click **Displays Manager** to display the settings view.

3.5 Displays Manager Standard View

To enable additional displays for connected display devices, you can Right-click the Windows desktop and click **ATI CATALYST® Control Center**. The **ATI CATALYST® Control Center** dialog box appears.

Use Displays Manager Standard View to set your desktop resolution, arrange your displays, or use the wizard to help you configure your display(s).


Catalyst Control Center - Basic
Display Settings for Desktop Viewing
The recommended settings for desktop viewing have been pre-selected.
Accept or change the desktop area (display resolution) that will be used by both of your displays, then click Finish to apply your settings and return to the Easy Setup / Quick Settings page.
To adjust other display settings, click the Advanced button on the Easy Setup / Quick Settings page.
Main: VL3231
Clone: BenQ FP91G+
Desktop Area:
1280 x 1024
Refresh Rate: 60 Hz
Color Quality: High
Start Over
< Back
Finish

Access Display Manager Standard View

1. Click the **View** button to switch to Standard View.
2. From the menu pane, click **Displays Manager** to display the settings view.

Enable a secondary display device

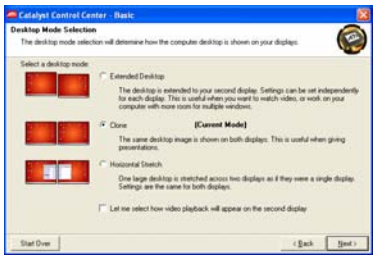
Click the **Wizard** button and follow the wizard instructions to enable Extended Desktop Mode.

Note: A secondary display device can be an LCD monitor, a CRT monitor, a TV, or a VCR.

Catalyst Control Center - Basic
Available Display Devices
You can show your computer desktop on one or more displays at the same time.
The following display devices are connected to your ATI graphics product.
Which would you like to use?
Choose Main Display:
Digital Flat Panel
(M3231)
Digital Flat Panel
(BenQ FP91G+)
Choose Second Display:
Digital Flat Panel
(M3231)
Digital Flat Panel
(BenQ FP91G+)
None
< Back
Next >

Enable Clone Mode

1. Click **Displays Manager** button in Standard View.
2. Click the **Wizard** button and follow the instructions to enable Clone Mode.


Catalyst Control Center - Basic
Desktop Mode Selection
The desktop mode selection will determine how the computer desktop is shown on your displays.
Select a desktop mode:
Extended Desktop
The desktop is extended to your second display. Settings can be set independently for each display. This is useful when you want to watch video, or work on your computer with more room for multiple windows.
Clone
(Current Mode)
The same desktop image is shown on both displays. This is useful when giving presentations.
Horizontal Stretch
One large desktop is stretched across two displays as if they were a single display. Settings are the same for both displays.
Let me select how video playback will appear on the second display
Start Over
< Back
Next >

Enable Horizontal Stretch Mode

Click the **Wizard** button and follow the wizard instructions to enable Horizontal Stretch Mode.

Apply your settings

1. Click **Apply** to save your changes and leave the Catalyst® Control Center open.
2. Click **OK** to save your changes and exit the Catalyst® Control Center.

Discard your settings

Click **Discard** to ignore any unsaved changes and restore the settings that existed when the Catalyst® Control Center was opened or the last time Apply was used. Discard does not close the Catalyst® Control Center .

*Clicking **Discard** applies to all features of an option, not just the features in the current view.*

3.6 Displays Manager Advanced View

Use Displays Manager Advanced View to set your desktop resolution, the display refresh rate, and arrange your displays.

To change your display configuration requires dragging and/or clicking or right-clicking a display icon.

3.6.1 Enable Clone Mode

If the secondary device is disabled:

1. Click **Displays Manager** in Advanced View.
2. Click and drag the display device icon in Additional Displays to the empty box to the right of the **Main** box.
3. Click **Clone Main with [display device]** in the pop-up menu.

If the secondary display is enabled:

1. Right click the display device icon in the "Desktop 2" box when in Extended mode (in the "Rightmost" box when in Stretch Horizontal mode, or in the "Lower" box in Stretch Vertical mode).
2. Click **Clone Main with** [display device].
3. Click **Yes** to the Displays Manager Notification dialog.
   Note: Display device can be CRT, DFP, TV, or HDTV.

3.6.2 Enable Stretch Main Vertically

If the secondary display is disabled:
1. Click **Displays Manager** in Advanced View.
2. Click and drag the display device icon from Additional Displays to the empty box to the right of the **Main** box.
3. Click **Stretch vertically onto [display device]** in the pop-up menu.
4. Click **Yes** in the Displays Manager Notification dialog.

If the secondary display is enabled:
1. Right click the display device icon in the "Desktop 2" box when in Extended mode (in the "Rightmost" box when in Stretch Horizontal mode, or in the "Clone" box in Clone mode).
2. Click **Stretch vertically onto [display device]** in the pop-up menu.
3. Click **Yes** in the Displays Manager Notification dialog.
   Note: Display device can be CRT, DFP, TV, or HDTV.

3.6.3 Enable Stretch Main Horizontally

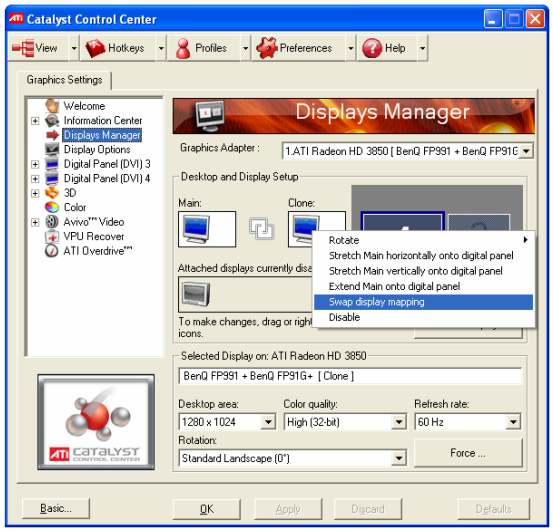
If the secondary display is disabled:
1. Click **Displays Manager** in Advanced View.
2. Click and drag the display device icon from Additional Displays to the empty box to the right of the **Main** box.
3. Click **Stretch horizontally onto [display device]**.

If the secondary display is enabled:
1. Right click the display device icon in the "Desktop 2" box when in Extended mode (in the "Lower" box when in Stretch Vertical mode, or in the "Clone" box in Clone mode).
2. Click **Stretch horizontally onto [display device]** in the pop-up menu.
3. Click **Yes** to the Displays Manager Notification dialog.
   Note: Display device can be CRT, DFP, TV, or HDTV depending on the device connection.

3.6.4 Swap displays in Extended Mode

Use Swap displays to switch your desktops when using multiple monitors.

1. Click **Displays Manager** in Advanced View.
2. Right-click any Desktop icon.
3. Select **Swap displays**.
4. Click either **Maintain per-display mode settings** or **Swap displays order only**.
   Note: Swap displays order only swaps displays while maintaining the existing display settings. Maintain per-display mode settings swaps displays and display settings.



3.6.5 Change desktop size

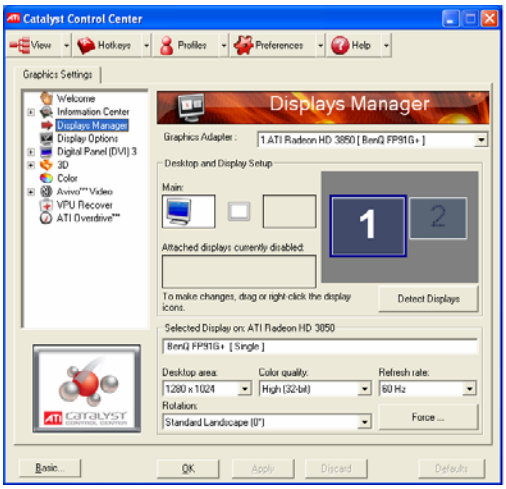
1. Click **Displays Manager** in Advanced View.
2. Select a size from the **Desktop Area** drop-down menu.

3.6.6 Change Color quality

1. Click **Displays Manager** in Advanced View.
2. Select the desired color setting from the **Color Quality** drop-down menu.

3.6.7 Change display refresh rate

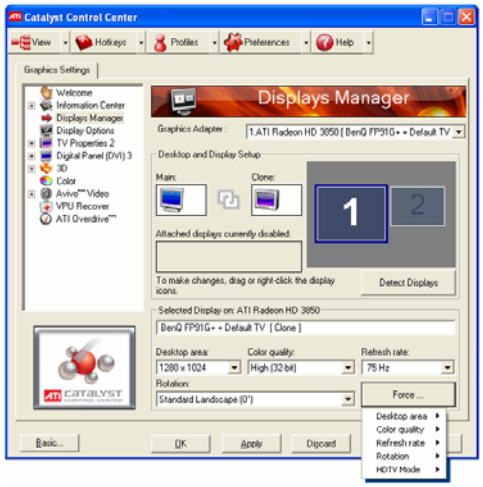
1. Click **Displays Manager** in Advanced View.
2. Choose a refresh rate from the **Refresh Rate** drop-down menu.
   Note: See your monitor manual for supported refresh rates. Setting a refresh rate higher than recommended by the monitor manufacturer could damage the monitor.



3.6.8 Force changes to a specific display setting

You can force the Catalyst® Control Center to override the display settings required, or not allowed, by a specific application.

1. From the Tree View pane, click **Displays Manager**.
2. Click the **Force** button.
3. Use the mouse to cursor over to the display feature to force.
4. Highlight and then click the required setting.



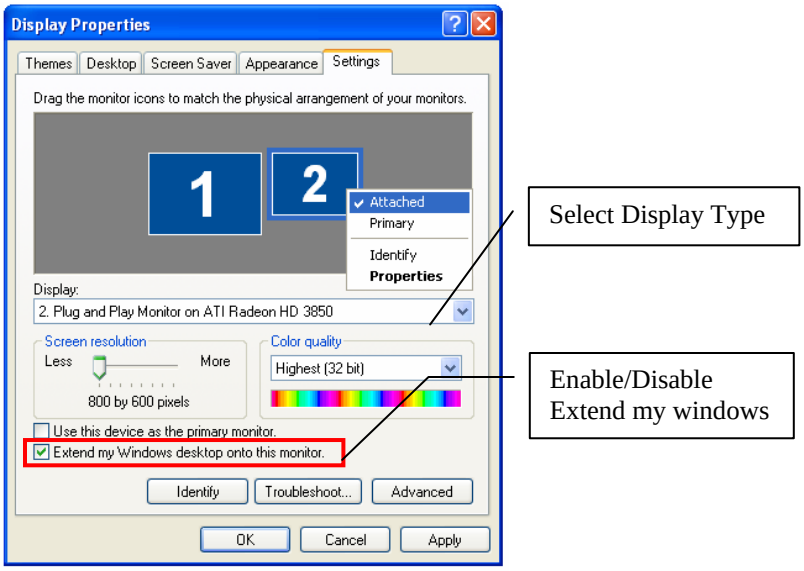
3.6.9 Detect a newly connected display device

Detect a display device, such as a Digital Flat Panel or TV without having to restart your computer

1. From the Tree View pane, click **Displays Manager**.
2. Click **Detect Displays** button.

Extended Desktop Mode

In this mode, the desktop area is spread across both displays. This mode can be set for multiple categories of displays, although display limitations may override the capabilities of the ATI Radeon™ HD 3800. For example, if the second display is a TV monitor, due to the limitations of the monitor itself, the resolution cannot be set above 1024x768 and the refresh rate cannot be set above 60 Hz. However, the PC monitor in such a configuration may have its refresh rate and resolution set much higher.



To configure settings for Display 1 or Display 2, on your Settings panel, click the right mouse button on either of the monitor icons to display a list of Settings options. Click the left mouse button on one of the options you want to configure:

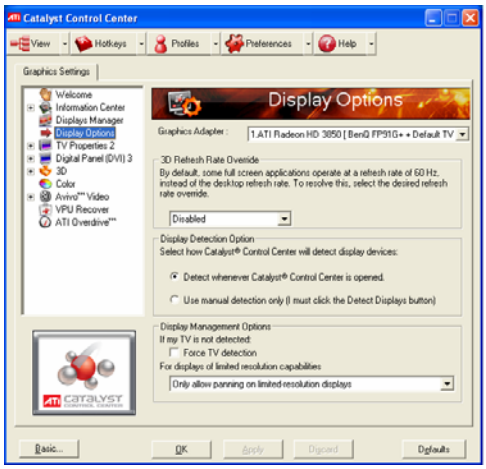
3.7 Display Options

The Display Options gives you additional control to optimize performance of OpenGL® and Direct 3D® applications.

Use 3D Refresh Rate Override to set a refresh rate of your choice when a full-screen application or game has a default refresh rate that is lower than optimal.

Choose one of the Display Detection Options to prevent screen flicker when detecting a display.

If you are using an older TV or one that has non-standard inputs that may not be automatically detected, use Force TV Detection. Such a TV, once detected, will appear in Displays Manager and can be configured as required. However, some features that rely on automatic detection, such as extended desktop, will not be supported.



Select a refresh rate override

Some applications may have a default refresh rate lower than the optimal setting for your monitor. 3D Refresh Rate Override enables you to set the refresh rate for full-screen applications or games utilizing Microsoft® DirectX® or OpenGL®. You can either set an explicit refresh rate, or make the refresh rate the same as the desktop, or disable this feature allowing the application to set the refresh rate.

1. Click **Display Options** in Advanced View.
2. Select the desired refresh rate from the **3D Refresh Rate Override** drop-down menu.

Determine how display devices are detected

Use this feature to determine how the Catalyst® Control Center detects display devices connected to your computer. You can set the Catalyst® Control Center to automatically detect all connected display devices when it is opened or you can manually detect connected devices when they are required.

1. Click **Display Options** in Advanced View.
2. Click either
   - Detect whenever Catalyst® Control Center is opened.
     or
   - Use manual detection only (click Detect Displays button).
     *Note: Detect Displays button is located on the **Displays Manager** page.*

Force TV detection

Use **Force TV detection** if your TV is not automatically detected by the CATALYST® Control Center and does not appear in the Displays Manager page. This may be the case if your TV has non-standard inputs.

*Note: If **Force TV detection** is required to detect your TV some features that rely on automatic detection, such as extended desktop, will not be supported.*

1. Click **Display Options** in Advanced View.
2. Click **Force TV detection**.
   Note: This option is not available if the installed graphics card does not support TV Out.

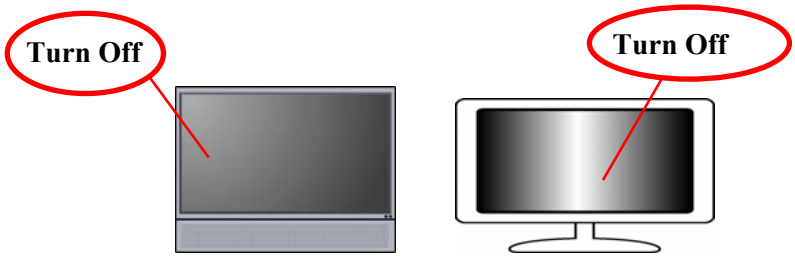
Set resolution modes for devices with limited resolution capabilities

1. Click **Display Options** in Advanced View.
2. Select one of the following from the **For displays of limited resolution capabilities** drop-down menu:
   - List only those modes supported by all displays
   - Only allow panning on limited-resolution displays
   - List all possible modes (including panning modes)

3.8 Using the CRT/TV Features (TV-out function optional)

3.8.1 How to use TV-out cables correctly

1. Power off your PC and TV first.
2. Connect the signal cable from the Video output on the VGA card to the video input on your TV. Power on your TV and PC normally after checking all connections.



Caution!
Before you turn on your system, you have to be sure the VGA card is setup already and all the cables are connected.

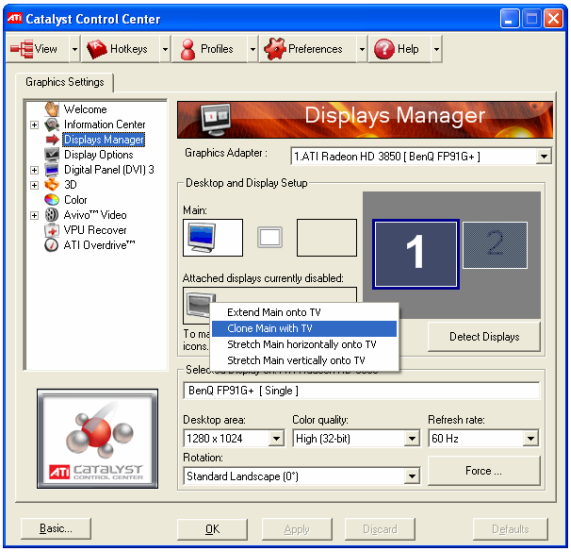
DO NOT connect / disconnect TV-out cable when your TV or PC is Power On.

3.8.2 How to change the TV settings

Your graphics accelerator has TV-Out functionality. Using this feature, you can connect a TV to your computer's video output to view the desktop.

If you are not using a TV for your computer's display, it is recommended that you disable TV display for optimal performance (higher refresh rates). You can re-enable TV display at a later date.

- Supported TV Display (TV-out) resolutions are 640x480@60Hz, 800x600@60Hz, and 1024x768@60Hz for **NTSC**
- Supported TV Display (TV-out) resolutions are 640x480@50Hz, 800x600@50Hz, and 1024x768@50Hz for **PAL**
- Low resolution modes are not selectable in Windows. These modes are used by some application programs directly.



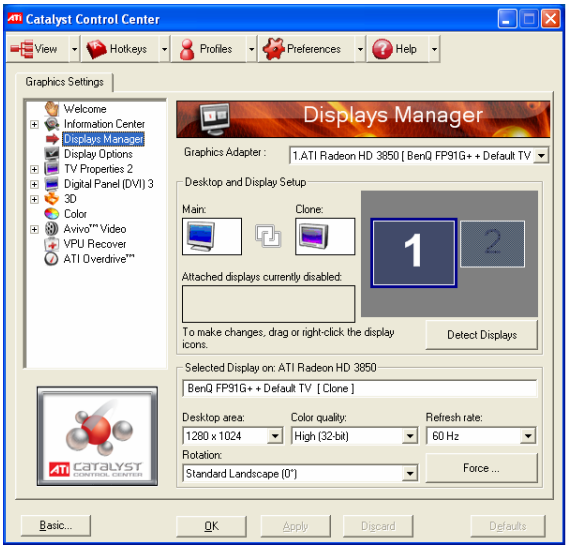
Enable Clone Mode

If the secondary device is disabled:

1. Click **Displays Manager** in Advanced View.
2. Click and drag the display device icon in Additional Displays to the empty box to the right of the **Main** box.
3. Click **Clone Main with TV** in the pop-up menu.

If the secondary display is enabled:

1. Right click the display device icon in the "Desktop 2" box when in Extended mode (in the "Rightmost" box when in Stretch Horizontal mode, or in the "Lower" box in Stretch Vertical mode).
2. Click **Clone Main with TV**.
3. Click **Yes** to the Displays Manager Notification dialog.
   Note: Display device can be CRT, DFP, TV, or HDTV.



3.8.3 TV Properties

If your graphics card has support for TV Out use the TV Properties to configure your TV settings.

The TV Properties is comprised of:

- Image Quality
- Color
- Adjustments
- Formats

Use Image Quality to adjust the contrast, saturation, and flicker of your screen.

Use Color to adjust Hue, Saturation, and Temperature.
Note: This feature is supported by specific high-end ATI graphics cards only.

Use Screen Adjustment to set the video mode, enable overscan, and change the position and size of the screen.

Use Formats to determine how the TV signal is to be detected.

3.8.4 TV Adjustments

Use Screen Adjustments to establish the attributes, such as maximum resolution and refresh rates, of the connected TV, and to resize and position the output seen on the TV.

Find the maximum available resolution and refresh rates for my TV

1. Expand **TV Properties** in the Advanced View.
2. Click **Adjustments**.
3. **Attributes** presents the signal format, if known, the maximum resolution and maximum refresh rate supported by your TV.

Enable Video Mode

1. Expand **TV Properties** in Advanced View.
2. Click **Adjustments**.
3. Select **Video Mode** to place a check mark in the check box.
   Note: Video Mode is only supported in specific lower resolution modes such as 720x480x16 and 640x480x32.

Adjust screen position and size

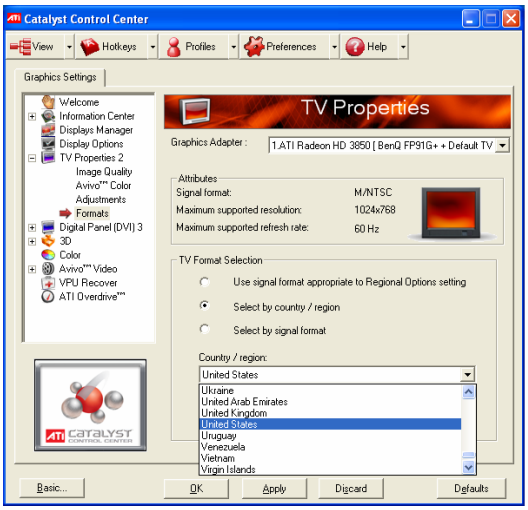
1. Expand **TV Properties** in Advanced View.
2. Click **Adjustments**.
3. Click any of the four buttons grouped in the center of the **Screen Position and Size** box.

3.8.5 To select your TV format by country

Use TV Formats to determine how the TV signal is detected.

Select TV format determined by country or region

1. Expand **TV Properties** in Advanced View.
2. Click **Format**.
3. Click **Select by country / region.**
4. Select country or region from the Country/Region drop-down menu.

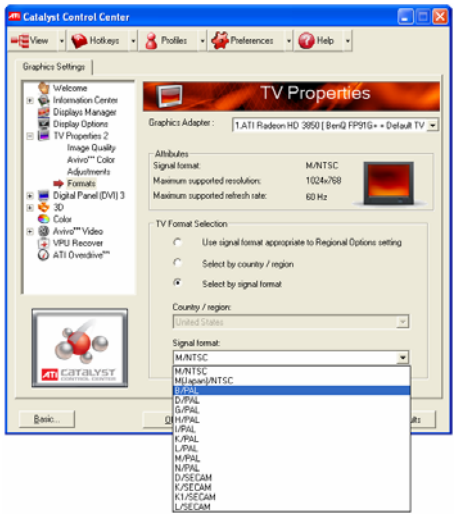


5. Click **OK** or **Apply** to save the changes you have made.

3.8.6 To set your TV output to PAL

Select by TV signal format

1. Expand **TV Properties** in Advanced View.
2. Click **Format**.
3. Click **Select by signal format**.
4. Select a TV format from the Signal format drop-down menu.



6. **For PAL TV systems, please select "Signal format", then change the Format to PAL.**
7. Click **OK** or **Apply** to save the changes you have made.

3.9 Using the HDTV Features

View computer output directly on your High Definition Television (HDTV) or other component input device. Provide a big-screen experience from your computer that is ideal for playing games, giving presentations, watching movies, and browsing the Internet.

3.9.1 Installing your ATI HDTV video cable

1. Turn on your component input device, and set it to YPbPr input.
2. Turn on your computer.
   Note: Your TV will not display anything until Windows starts. This can take several minutes.

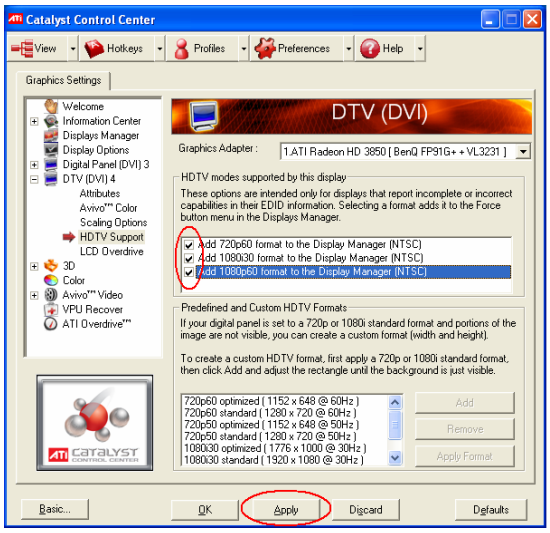
3.9.2 Using Your ATI HDTV Video Cable

Use the HDTV Video Cable to watch DVD movies and play video games on your High Definition Television.

Copy-protected DVDs restrict playback to 480i and 480p modes.

For maximum performance when you watch DVD movies or play computer games on your HDTV, you should find the mode and screen resolution that provide the best result on your TV, and use those settings exclusively.

3.9.3 HDTV Support


Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Digital Panel (DVI) 3
DTV (DVI) 4
Attributes
Avivo™ Color
Scaling Options
HDTV Support
LCD Overdrive
3D
Color
Avivo™ Video
VPU Recover
ATI Overdrive™
DTV (DVI)
Graphics Adapter :
1.ATI Radeon HD 3850 [BenQ FP91G+ + VL3231]
HDTV modes supported by this display
These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.
Add 720p60 format to the Display Manager (NTSC)
Add 1080i30 format to the Display Manager (NTSC)
Add 1080p60 format to the Display Manager (NTSC)
Predefined and Custom HDTV Formats
If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.
720p60 optimized (1152 x 648 @ 60Hz)
720p60 standard (1280 x 720 @ 60Hz)
720p50 optimized (1152 x 648 @ 50Hz)
720p50 standard (1280 x 720 @ 50Hz)
1080i30 optimized (1776 x 1000 @ 30Hz)
1080i30 standard (1920 x 1080 @ 30Hz)
Add
Remove
Apply Format
Basic...
OK
Apply
Discard
Defaults

Use HDTV Support when your CRT or DFP device supports one or more HDTV modes that are not initially listed in the Displays Manager due to an incomplete EDID. Selecting one or both of the HDTV modes adds them to the Force button located in the Displays Manager when the associated display is selected.

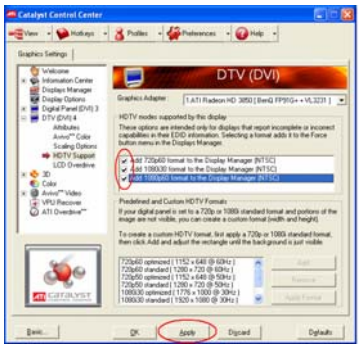
If you have a CRT and DFP device and want both to support HDTV, you must go to both HDTV Support pages and select both Add 720p and Add 1080i check boxes.

Note: Forcing a display mode that exceeds its EDID limits may result in permanent damage to your display.

3.9.4 Add an HDTV format

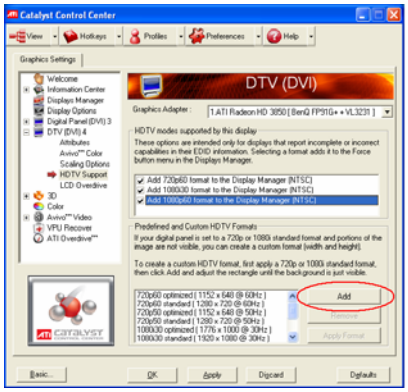
The **Predefined and Custom HDTV Formats** list box should list any standard and optimized HDTV formats supported by the digital panel`s EDID. If the list is empty, then no HDTV formats are natively supported.

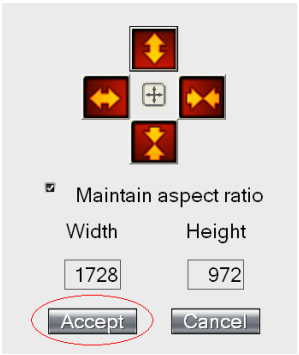
1. Expand **Digital Panel Properties** in Advanced View.
2. Click **HDTV Support**.
3. Select either 720p or 1080i in HDTV modes supported by this display.
4. Click **Apply**.



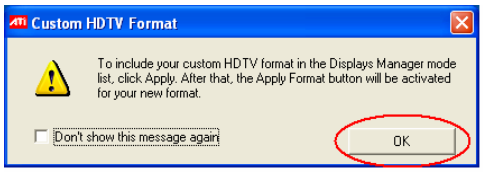
5. Select 1080i standard (1920x1080@30Hz) click **Apply Format** button, Over Scan occurs.

6. Click **Add** button.
7. A group of four arrow buttons and a large rectangle is overlaid on the screen. Use these arrows to increase or decrease the width and height of the rectangle until the blue background is just visible.
8. Click **Maintain aspect ratio** to maintain the ratio between width and height while making adjustments.
9. Click **Accept** button.

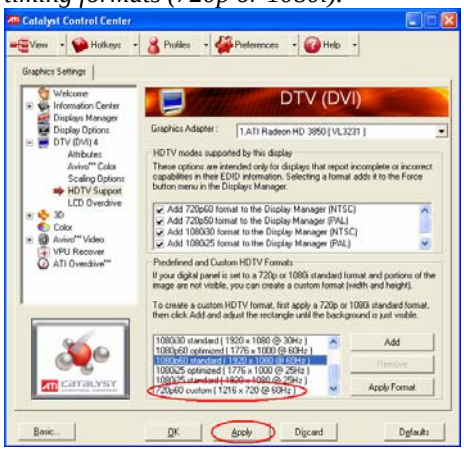




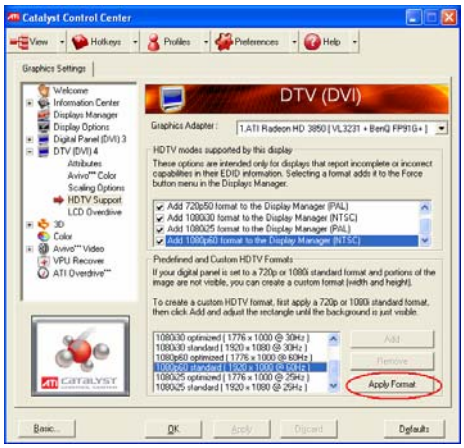
10. Click **OK** in the HDTV Format warning message box.


Custom HDTV Format
To include your custom HDTV format in the Displays Manager mode list, click Apply. After that, the Apply Format button will be activated for your new format.
Don't show this message again
OK

11. Click **Apply** button to add your new HDTV format to the Predefined and custom HDTV Formats list and the Displays Manager mode list then close this windows.
    Note: The format to be added must be based on one of the standard timing formats (720p or 1080i).

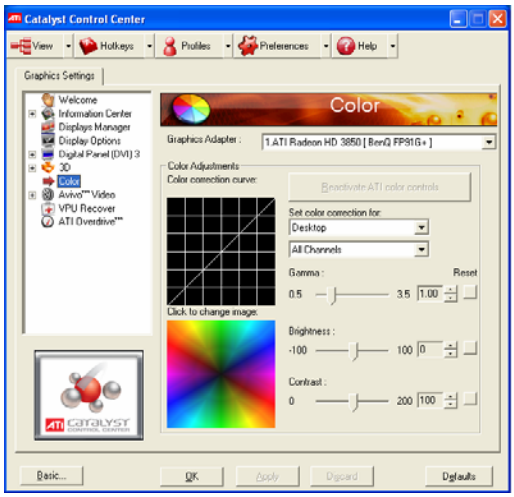

Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
DTV (DVI) 4
Attributes
Avivo™ Color
Scaling Options
HDTV Support
LCD Overdrive
3D
Color
Avivo™ Video
VPU Recover
ATI Overdrive™
DTV (DVI)
Graphics Adapter :
1.ATI Radeon HD 3850 [VL3231]
HDTV modes supported by this display
These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.
Add 720p60 format to the Display Manager (NTSC)
Add 720p50 format to the Display Manager (PAL)
Add 1080i30 format to the Display Manager (NTSC)
Add 1080i25 format to the Display Manager (PAL)
Predefined and Custom HDTV Formats
If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.
1080i30 standard [1920 x 1080 @ 30Hz]
1080p60 optimized [1776 x 1000 @ 60Hz]
1080i60 standard [1920 x 1080 @ 60Hz]
1080i25 optimized [1776 x 1000 @ 25Hz]
1080i25 standard [1920 x 1080 @ 25Hz]
720p60 custom [1216 x 720 @ 60Hz]
Add
Remove
Apply Format
Basic...
OK
Apply
Discard
Defaults

12. Restart CATALYST® Control Center click **Apply Format,** Over Scan diminished.


Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Digital Panel (DVI) 3
DTV (DVI) 4
Attributes
Avivo™ Color
Scaling Options
HDTV Support
LCD Overdrive
3D
Color
Avivo™ Video
VPU Recover
ATI Overdrive™
DTV (DVI)
Graphics Adapter :
1.ATI Radeon HD 3850 [VL3231 + BenQ FP91G+]
HDTV modes supported by this display
These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.
Add 720p50 format to the Display Manager (PAL)
Add 1080i30 format to the Display Manager (NTSC)
Add 1080i25 format to the Display Manager (PAL)
Add 1080p60 format to the Display Manager (NTSC)
Predefined and Custom HDTV Formats
If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.
1080i30 optimized [1776 x 1000 @ 30Hz]
1080i30 standard [1920 x 1080 @ 30Hz]
1080p60 optimized [1776 x 1000 @ 60Hz]
1080i60 standard [1920 x 1080 @ 60Hz]
1080i25 optimized [1776 x 1000 @ 25Hz]
1080i25 standard [1920 x 1080 @ 25Hz]
Add
Remove
Apply Format
Basic...
OK
Apply
Discard
Defaults

3.10 Color Desktop

Adjust the overall richness of color by using the Gamma control. To adjust the overall brightness use the Brightness control, and the overall contrast use the Contrast control.



Adjust Color Gamma

1. Click **Color** in Advanced View.
2. Click and drag the Control slider to your preferred setting:
   - To increase the Gamma, move the slider to the right.
   - To decrease the Gamma, move the slider to the left.
   - Optionally, click the up and down arrow buttons of the adjustment box.
     Note: Click the Reset button to cancel any adjustments made.
     Note: The preview image automatically displays the adjustments you have made.

Adjust Color Brightness

1. Click **Color** in Advanced View.
2. Click and drag the **Control** slider to your preferred setting:
    - To increase the Brightness, move the slider to the right.
    - To decrease the Brightness, move the slider to the left.
    - Optionally, click the up and down arrow buttons in the adjustment box.
      *Note: Click the **Reset** button to cancel any adjustments made.*
      Note: The preview image automatically displays the adjustment you have made.

Adjust Color Contrast

1. Click **Color** in Advanced View.
2. Click and drag the **Control** slider to your preferred setting:
    - To increase the Contrast, move the slider to the right.
    - To decrease the Contrast, move the slider to the left.
    - Optionally, click the up and down arrow buttons in the adjustment box.
      *Note: Click the **Reset** button to cancel any adjustments made.*
      Note: The preview image automatically displays the adjustment you have made.

3.11 ATI Overdrive (optional)

Use the ATI Overdrive to maximize the performance of the graphics processing unit (GPU) on your graphics card. An on-chip thermal sensor constantly monitors the temperature of the GPU allowing the maximum clock speed to be maintained while avoiding overheating. If the GPU gets too hot, the ATI Overdrive will automatically decrease the clock speed until a safe temperature is reached. The ATI Overdrive will never reduce the graphics processor speed below the default clock speed.

Use the Automated clock configuration utility to obtain the ATI recommended the ATI Overdrive speeds for the graphics processor clock and video memory clock. Alternatively, manually set these speeds to meet your specific requirements. Finally, the ATI Overdrive can be configured to run when the computer is booted or only when running 3D applications.

If your computer cannot restart after setting a higher clock speed, press and hold the SHIFT key during system start-up until you hear three beeps. Once your computer has full booted, disable Enable new clock settings at logon.

Unlock ATI Overdrive

The first time ATI Overdrive is accessed all the features are unavailable. You must **"unlock"** ATI Overdrive in order to change any settings.

1. From the menu pane, click **ATI Overdrive**.
2. Click the **Lock** button.
3. Click **Yes** in the ATI Overdrive warning message.

Set the recommended speeds for the graphics clock and memory

1. From the menu pane, click **ATI Overdrive**.
2. Click **Run automated clock configuration utility** button.
3. To accept the changes when the clock configuration utility has finished click the **Apply** button in the utility's confirmation dialog.

Change the graphics processor clock speed

1. From the menu pane, click **ATI Overdrive**.
2. Move the Graphics Processor Clock slider to the desired setting.
   Note: The upper limit is the highest speed that can be safely set for your specific graphics card. The lower limit is the hardware default speed.

Any changes made to the clock speed is only valid during the existing session. If you log out or reboot the computer the clock speeds are returned to the factory default settings. To save your new setting enable one of the Options available at the bottom right of the ATI Overdrive window.

Change the memory clock speed

1. From the menu pane, click **ATI Overdrive**.
2. Move the Memory Clock slider to the desired setting.
   Note: The upper limit is the highest speed that can be safely set for your specific graphics card. The lower limit is the hardware default speed.

Any changes made to the clock speed is only valid during the existing session. If you log out or reboot the computer the clock speeds are returned to the factory default settings. To save your new setting enable one of the Options available at the bottom right of the ATI Overdrive window.

Enable ATI Overdrive for 3D application

ATI Overdrive can be enabled automatically whenever a 3D application is opened.

1. From the menu pane, click **ATI Overdrive**.
2. Click **Enable ATI Overdrive for 3D applications only.**

Enable clock settings at logon

The settings made to ATI Overdrive can be enabled automatically when you log onto your computer.

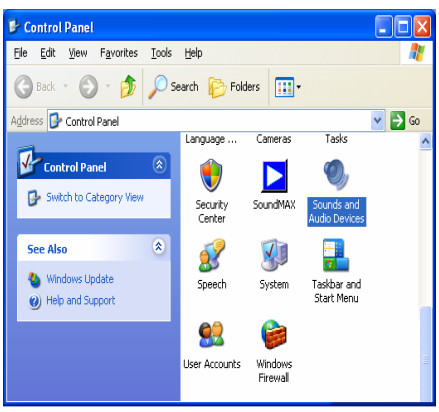
1. From the menu pane, click **ATI Overdrive**.
2. Click **Enable new clock settings at logon**.

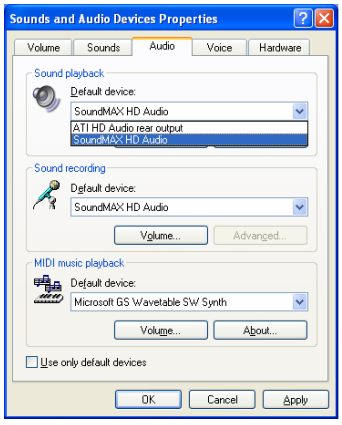
3.12 HDMI Video and Audio (optional)

ATI Radeon™ HD 3800 series build in HD audio chip on the cards and the HD audio driver will be installed during the installation of the graphic card driver. According to the Microsoft's rule the latter installed audio device will become the default audio device. So the HD audio device of ATI Radeon™ HD 3800 series will become the default audio device in the system.

To change the default audio device back to the original audio device please follow below steps.

1. Please enter the **"Control Panel"** of Windows.
2. Double click the **"Sounds and Audio Devices"** option of the **"Control Panel"**.
3. Click the **"Audio"** tab in **"Sounds and Audio Devices Properties"**.
4. Choose the original audio device in the drop down menu of **"Default device:"** in **"Sound playback"** section.
5. Click **"OK"** to quit.
6. Finish.





APPENDIX A SPECIFICATIONS

A.1 Hardware Specifications

Generic Classification
Video Display Adapter/Fixed Function Graphics Accelerator

Bus Type
HD3870XTG4 x16 PCI Express bus
HD3850PG3 x16 PCI Express bus
XHD3870XTG4 x16 PCI Express bus
XHD3870XTG3 x16 PCI Express bus
XHD3850PG3 x16 PCI Express bus
HD385P3 x16 PCI Express bus
HD383P3 x16 PCI Express bus
XHD3870X2 x16 PCI Express bus
XHD3850X2 x16 PCI Express bus
HD3870X2 x16 PCI Express bus
HD387XT3 x16 PCI Express bus
RX385PA3 AGP Bus

Video Connector
S-video connector
LCD standard 24-pin DVI (Digital Video Interface)

Graphics Accelerator
HD3870XTG4 for ATI Radeon™ HD 3870
HD3850PG3 for ATI Radeon™ HD 3850
XHD3870XTG4 for ATI Radeon™ HD 3870
XHD3870XTG3 for ATI Radeon™ HD 3870
XHD3850PG3 for ATI Radeon™ HD 3850
HD385P3 for ATI Radeon™ HD 3850
HD383P3 for ATI Radeon™ HD 3830
XHD3870X2 for ATI Radeon™ HD 3870
XHD3850X2 for ATI Radeon™ HD 3850
HD3870X2 for ATI Radeon™ HD 3870
HD387XT3 for ATI Radeon™ HD 3870
RX385PA3 for ATI Radeon™ HD 3850

Display Memory
HD3870XTG4 use 256MB/512MB GDDR4 DRAM
HD3850PG3 use 256MB/512MB GDDR3 DRAM
XHD3870XTG4 use 256MB/512MB GDDR4 DRAM
XHD3870XTG3 use 256MB/512MB/1GB GDDR3 DRAM
XHD3850PG3 use 256MB/512MB GDDR3 DRAM
HD385P3 use 256MB/512MB/1GB GDDR3 DRAM
HD383P3 use 256MB/512MB GDDR3 DRAM
XHD3870X2 use 1GB GDDR3 DRAM
XHD3850X2 use 1GB GDDR3 DRAM
HD3870X2 use 1GB GDDR3 DRAM
HD387XT3 use 512MB/1GB GDDR3 DRAM
RX385PA3 use 256MB/512MB GDDR3 DRAM

A.2 Programming Information

The **ATI Radeon™ HD 3800** series supports all VGA modes. This is the default configuration of the VGA BIOS.

The extended VGA graphics mode is invoked by the normal INT 10 mode call. All the VGA extended modes can be invoked with the VESA defined select extended mode BIOS call.

A.3 Resolution Table

Resolutions and color depth table.

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE		
640x480	8bpp	16bpp	32bpp	256MB	512MB	1GB
800x600	8bpp	16bpp	32bpp	256MB	512MB	1GB
1024x768	8bpp	16bpp	32bpp	256MB	512MB	1GB
1152x864	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x1024	8bpp	16bpp	32bpp	256MB	512MB	1GB
1600x1200	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1080	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1200	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1440	8bpp	16bpp	32bpp	256MB	512MB	1GB
2048x1536	8bpp	16bpp	32bpp	256MB	512MB	1GB

The following table shows the resolutions for TV-Out:

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE		
640x480	8bpp	16bpp	32bpp	256MB	512MB	1GB
800x600	8bpp	16bpp	32bpp	256MB	512MB	1GB
1024x768	8bpp	16bpp	32bpp	256MB	512MB	1GB

LCD resolutions and color depth table.

GRAPHICS RESOLUTION	COLOR DEPTH			FRAME BUFFER SIZE		
640x480	8bpp	16bpp	32bpp	256MB	512MB	1GB
720x480	8bpp	16bpp	32bpp	256MB	512MB	1GB
800x600	8bpp	16bpp	32bpp	256MB	512MB	1GB
1024x768	8bpp	16bpp	32bpp	256MB	512MB	1GB
1152x864	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x720	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x768	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x800	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x960	8bpp	16bpp	32bpp	256MB	512MB	1GB
1280x1024	8bpp	16bpp	32bpp	256MB	512MB	1GB
1600x1200	8bpp	16bpp	32bpp	256MB	512MB	1GB
1792x1344	8bpp	16bpp	32bpp	256MB	512MB	1GB
1800x1440	8bpp	16bpp	32bpp	256MB	512MB	1GB
1856x1392	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1080	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1200	8bpp	16bpp	32bpp	256MB	512MB	1GB
1920x1440	8bpp	16bpp	32bpp	256MB	512MB	1GB
2048x1536	8bpp	16bpp	32bpp	256MB	512MB	1GB
2560x1600	8bpp	16bpp	32bpp	256MB	512MB	1GB

8bpp = 256 colors
16bpp = 64K colors = High color
32bpp = 16.7M colors = True color

My monitor is not capable of high resolution or refresh rate.

It depends on the display characteristics of your monitor. Consult your monitor documentation for the proper configuration.

(**This page was intentionally blank.)**

HD3800 Series
CrossFire2 edition

Table of Contents

CHAPTER 5 INTRODUCTION.....77

CHAPTER 6 HARDWARE INSTALLATION.....78

6.1 System Requirements..... 78
6.2 CrossFireX™ Power Supply Requirements..... 80
6.2.1 Additional Power Connection Requirements 81
6.3 To uninstall previous graphics drivers and software.. 83
6.4 Dual ATI Radeon™ HD 3800 CrossFireX™ setup..... 84
6.5 Connecting devices for ATI Radeon™ HD 3800 CrossFireX™ 85
6.6 Graphics cards with different amounts of memory ... 86
6.7 Card Reversal Recommend 86

CHAPTER 7 SOFTWARE INSTALLATION 87

7.1 Installing on Windows XP..... 87
7.2 Displays Manager Advanced View..... 88
7.3 Component Video Properties 89
7.4 Digital Panel Properties..... 91
7.5 CrossFireX™ 92

***APPENDIX B CrossFire FAQ* 94**

CHAPTER 5
INTRODUCTION

New ATI CrossFireX™ multi-GPU technology takes your gaming experience to the next level with more scalability, performance and compatibility. The technology combines the awe-inspiring capabilities of multiple ATI Radeon™ graphics cards and an ATI CrossFireX ready motherboard to meet the hard-core demands of your alternate reality. New ATI Radeon™ HD 3800 graphics cards are designed with an internal ATI CrossFireX™ Bridge Interconnect system to simplify installation. Experience stunning visual realism in today's demanding 3D games with uncompromising image quality, especially on HD displays. ATI CrossFireX: Multiply and Conquer!

A complete ATI CrossFireX system includes ATI Radeon Graphics, an AMD 790FX or AMD 790X Chipset, ATI CrossFireX Certified memory and an ATI CrossFireX Certified power supply.

CHAPTER 6
HARDWARE INSTALLATION

6.1 System Requirements

Hardware	• Intel® Pentium® 4 or AMD Athlon®. • 1GB of system memory • Optical drive for installation software (CD-ROM or DVD-ROM drive). • A 550 Watt or better power supply with two 2x3-pin PCIe™ power connectors. For optimal performance, we recommend requires one 2x3-pin and one 2x4-pin PCIe™ power connector.
Operating System	• Windows® XP with Service Pack 2 (SP2). • Windows® XP Professional x64 Edition. • Windows® Vista Ready.
Monitor	• High-resolution MultiSync or multi-frequency monitors or any other type of VGA monitor. • Digital flat-panel (DFP) displays or digital CRT display.
ATI CrossFire™ Requirements	To implement an ATI CrossFireX™ configuration using the ATI Radeon™ HD 3800 Series, requires: • An ATI CrossFireX™ certified motherboard with two (2) PCI Express® x16 slots and correct PCIe™ chipset driver. • A second ATI Radeon™ HD 3800 Series graphics card. • One ATI CrossFireX™ internal bridge interconnects. • A specialized PCI Express® 750 watt or greater power supply with two 2x4-pin and two 2x3-pin PCIe™ power connector is recommended. Consult your computer system manual to ensure the power supply is designed to accommodate a high-end

	graphics card with a peak dissipation above 150 watts.

External Connections

The following connection types are available on the baseplate of your ATI Radeon™ HD 3800 CrossFireX™ Edition:

- DVI-I
- CrossFireX™ Edge connectors

6.2 CrossFireX™ Power Supply Requirements

➢ HD3870X2

Power supplies with 500-Watt capacity, 30A current on 12V rail and two 6-pin PCI Express® power connectors is recommended for single ATI Radeon™ HD 3870X2 Series product.

ATI Radeon™ HD 3870X2 series CrossFire configuration (dual graphics card system) requires 750-Watt capacity power supply with 38A on 12V rail. CrossFire™ requires a power supply with two 6-pin and two 8-pin (or four 6-pin) PCI Express® power connectors.

Please consult your power supply vendor specifications to ensure your system meets the recommended functionality. CrossFire™ configurations require a CrossFire™ compliant motherboard, which includes two physical x16 PCI Express® slot interfaces.

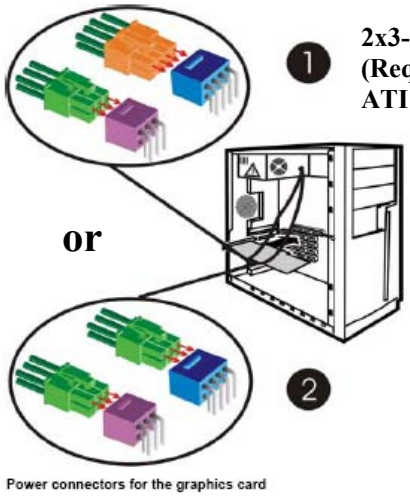
6.2.1 Additional Power Connection Requirements

Note:

- Use power supply 6-pin cable (note, power supply cable is 6-wire, not 3-wire)

1. The ATI Radeon™ HD 3870X2 series must be connected to the computer's power supply.

2. Locate the power connections on the ATI Radeon™ HD 3870X2 Series graphics card as shown in the following illustration.



Power connectors for the graphics card

Legend
1. 2×3-pin + 2×4-pin power connectors.
2. 2×3-pin + 2×3-pin power connectors.

3. Connect either two 2x3-pin PCIe™ power connectors, or one 2x3-pin and one 2x4-pin PCIe™ power connector to the graphics card.

   When connecting a 2×3-pin PCIe™ power connector to the 2×4-pin connection, the connector should cover the 6 pins of the 2×4-pin connection that are farthest away from the 2×3-pin connection on the graphics card.

   Caution! For optimal performance, and for ATI Overdrive, Overclock, and CrossFire™ configurations, for each CrossFire™ graphics card use one 2×3-pin and one 2×4-pin PCIe™ power connector on a 750 watt or better power supply.

   Note: Your computer will beep, possibly show a warning message on your display, and the boot process will stop if the graphics card is not correctly connected to the power supply.

4. Make sure the cables are not interfering with anything inside the computer (for example, a cooling fan) and replace the computer cover.
5. Reconnect any cables you have disconnected and plug in the computer's power cord.
6. Turn on the monitor and then your computer.

6.3 To uninstall previous graphics drivers and software

To ensure the successful installation of your new ATI Radeon™ HD 3800 CrossFireX™ Edition card, you must uninstall the drivers for the existing graphics card before removing it from your computer.

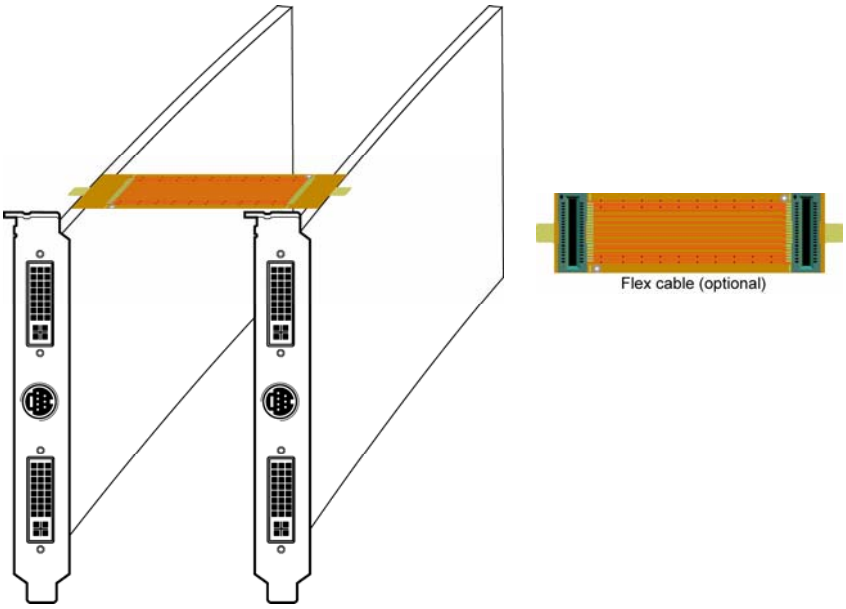
To uninstall previous drivers

With your current graphics card still in your computer:

1. Close all applications that are currently running.
2. Navigate to the Windows® **Control Panel** and click or double-click **Add/Remove Programs**.
3. If your old graphics card is an ATI product, select the **ATI Control Panel** and click the **Add/Remove** or **Change/Remove** button. Do this before removing the display drivers.
   Note: If your previous graphics card is an ATI product using a current driver, there may be an ATI Software Uninstall Utility that will remove all installed ATI software in a single step.
4. Select your current display drivers and click the **Add/Remove** or **Change/Remove** button.
5. The wizard will help you remove your current display drivers.
6. Restart your system after the drivers have been removed.

6.4 Dual ATI Radeon™ HD 3800 card CrossFireX™ setup

Only one CrossFireX™ bridge interconnect "flex cable" that connects the two CrossFireX™ cards can enable CrossFireX™.



In a multiple card configuration, the two ATI Radeon™ HD 3800 cards will be identical. Either card can operate as the Master or Slave card – this will be set by the driver.

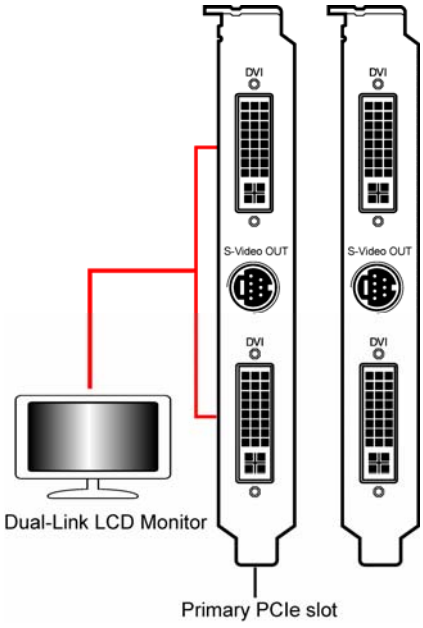
Note that in CrossFireX™ mode, only one display is enabled.

6.5 Connecting devices for ATI Radeon™ HD 3800 CrossFire™

The ATI Radeon™ HD 3800 series provides hardware CrossFireX™. The following illustration shows how to connect the ATI CrossFireX™ graphics cards.

With CrossFireX™ enabled, the system will support two display device. Other display devices will automatically be disabled in favor of the CrossFireX™ display.

LCD monitor should be connected to one of DVI ports of graphic card which is plugged in primary PCIe slot of motherboard.



6.6 Graphics cards with different amounts of memory

Graphics card with different amounts of memory can by used with CrossFireX™. However, restarting your computer is required. This will cause CrossFireX™ to reduce the amount of memory on the card with the most amount of memory to match the memory size of the graphics card with the least amount of memory.

Clicking **OK** to the memory mismatch error message will restart your computer.

Note: *When disabling CrossFireX™ you will be given the option to restart your computer to restore the original graphics memory size or continue with the reduced memory size.*

6.7 Card Reversal Recommend

A recommendation message to reverse the graphics card positions may appear if the master graphics card is not installed into the primary PCIe™ slot. Although CrossFireX™ can be enabled, performance may be improved by reversing the graphics card in the computer.

See you motherboard's manual to determine which is the primary PCIe™ slot.

CHAPTER 7
SOFTWARE INSTALLATION

7.1 Installing on Windows XP

Caution:
The Catalyst® Control Center requires that **Microsoft's .NET Framework Version 2.0** be installed. Without .NET Version 2.0 installed the Catalyst® Control Center will not launch properly, and the user will see an error message as a result.

http://msdn2.microsoft.com/en-us/netframework/default.aspx

● Microsoft .NET Framework Version 2.0 Redistributable Package

1. Start Windows.
2. When Windows detects your graphics card, the Found New Hardware **Wizard** dialog box appears.
3. Click **Cancel** to enter the Windows desktop.
4. Insert the CD installation disc into your CD-ROM drive.
5. The CD should Autorun and the following screen will appear.
   *Note: if the CD does not autorun click on "**Start**", then "**Run**", then type in "**D:\ATISETUP.EXE**" and click "**OK**".*
   (If D is not your CD-ROM drive, substitute D with the correct drive letter.)
6. Click on "ATI Easy Install" to begin the Installation Wizard.
7. When the Welcome box appears, click on the "**Next**" button to go to the next step.
8. The License Agreement dialog box appears, click on "**Yes**" button.
9. The Select Components dialog box appears, click on "**Express**" button.
10. When the Windows SETUP has completed copying the files to the computer, Windows will prompt you to restart. Click the **"Yes"** option and then click the "**Finish**" button.

7.2 Displays Manager Advanced View

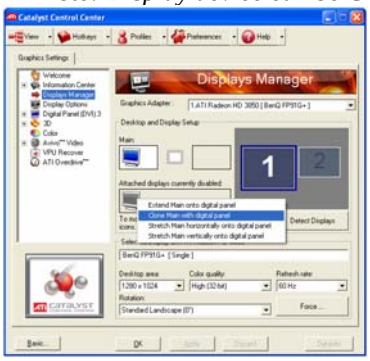
Use Display Manager Advanced View to set your desktop resolution, the display refresh rate, and arrange your displays.

To change your display configuration requires dragging and/or clicking or right-clicking a display icon.

Enable Clone Mode

If the secondary device is disabled:
1. Click **Displays Manager** in Advanced View.
2. Click and drag the display device icon in Additional Displays to the empty box to the right of the **Main** box.
3. Click **Clone Main with [display device]** in the pop-up menu.

If the secondary display is enabled:
1. Right click the display device icon in the "Desktop 2" box when in Extended mode (in the "Rightmost" box when in Stretch Horizontal mode, or in the "Lower" box in Stretch Vertical mode).
2. Click **Clone Main with** [display device].
3. Click **Yes** to the Displays Manager Notification dialog.
   Note: Display device can be CRT, DFP, TV, or HDTV.



7.3 Component Video Properties

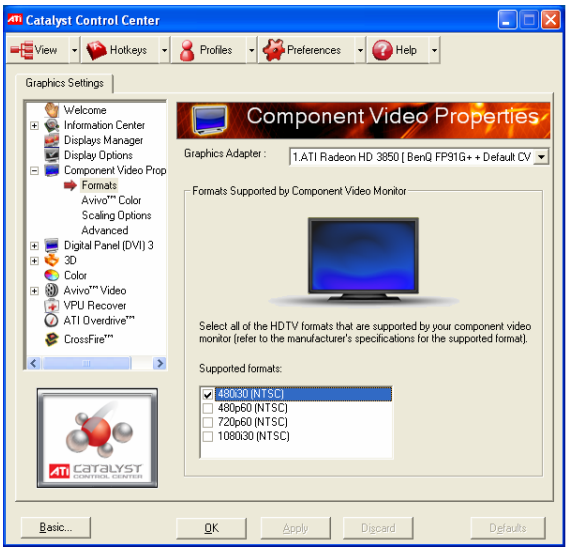
The Component Video Properties aspect of the Catalyst® Control Center adds further support when using the ATI HDTV Component Video Adapter.

Component Video Properties is made up of:

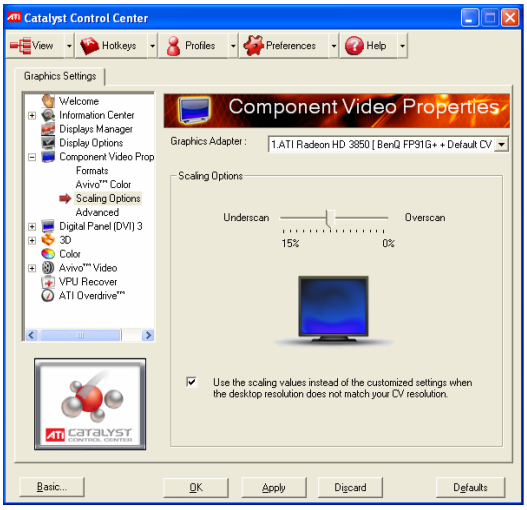
- Formats
- Adjustments

To access the Component Video Properties aspect

• Select **Component Video Properties** in Advanced View.



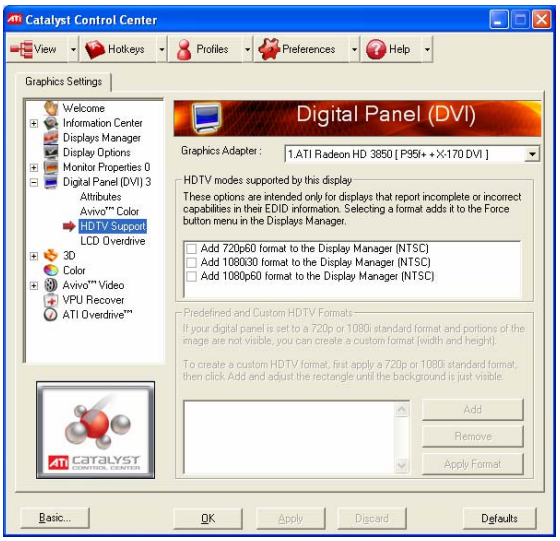
Use the scaling values instead of the customized settings when the desktop resolution does not match your DFP resolution.



7.4 Digital Panel Properties

Use the Digital Panel Properties aspect to configure the DVI settings and Image Scaling to improve image quality without impacting performance. Use HDTV Support to add EDID information (containing information about the capabilities of the display) about your connected HDTV display to the **Force** button in Displays Manager.

Note: *Catalyst® Control Center loads aspects dynamically based on what device is attached to the graphics card. If you have standard display device such as a CRT monitor or flat panel display Monitor Properties will appear instead of Digital Panel Properties. The latter is designed for use with such devices as HDTV displays.*

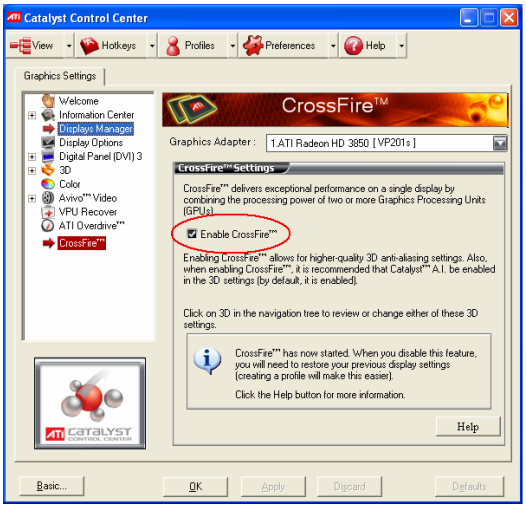

Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Monitor Properties 0
Digital Panel (DVI) 3
Attributes
Avivo™ Color
HDTV Support
LCD Overdrive
3D
Color
Avivo™ Video
VPU Recover
ATI Overdrive™
Digital Panel (DVI)
Graphics Adapter :
1.ATI Radeon HD 3850 [P95/+ +X-170 DVI]
HDTV modes supported by this display
These options are intended only for displays that report incomplete or incorrect capabilities in their EDID information. Selecting a format adds it to the Force button menu in the Displays Manager.
Add 720p60 format to the Display Manager (NTSC)
Add 1080i30 format to the Display Manager (NTSC)
Add 1080p60 format to the Display Manager (NTSC)
Predefined and Custom HDTV Formats
If your digital panel is set to a 720p or 1080i standard format and portions of the image are not visible, you can create a custom format (width and height).
To create a custom HDTV format, first apply a 720p or 1080i standard format, then click Add and adjust the rectangle until the background is just visible.
Add
Remove
Apply Format
Basic...
OK
Apply
Discard
Defaults

7.5 CrossFireX™

The CrossFireX™ aspect requires the following components to be available
in order to appear as an option within Catalyst® Control Center:

- A CrossFireX™ Ready motherboard with two PCI Express® X16 slots
- A CrossFireX™ Edition Series graphics card
- The ATI Radeon™ HD 3800 CrossFireX™ Edition can be paired with any standard ATI Radeon™ HD 3800-based graphics card.
- An interconnect cable, supplied with the CrossFireX™ Edition graphics card, connecting the two cards to a single monitor.

It is recommended that Catalyst® A.I. be enabled in order to automatically select the preferred rendering mode for target applications. For applications that are not identified in Catalyst® A.I., or when Catalyst® A.I. is disabled, default CrossFireX™ rendering modes are used. In addition, Super Anti-aliasing modes can be directly enabled in Catalyst® Control Center.


Catalyst Control Center
View
Hotkeys
Profiles
Preferences
Help
Graphics Settings
Welcome
Information Center
Displays Manager
Display Options
Digital Panel (DVI) 3
3D
Color
Avivo™ Video
VPU Recover
ATI Overdrive™
CrossFire™
CrossFire™
Graphics Adapter :
1.ATI Radeon HD 3850 [VP201s]
CrossFire™ Settings
CrossFire™ delivers exceptional performance on a single display by combining the processing power of two or more Graphics Processing Units (GPUs).
Enable CrossFire™
Enabling CrossFire™ allows for higher-quality 3D anti-aliasing settings. Also, when enabling CrossFire™, it is recommended that Catalyst™ A.I. be enabled in the 3D settings (by default, it is enabled).
Click on 3D in the navigation tree to review or change either of these 3D settings.
CrossFire™ has now started. When you disable this feature, you will need to restore your previous display settings (creating a profile will make this easier).
Click the Help button for more information.
Help
CATALYST
Basic...
OK
Apply
Discard
Defaults

To access CrossFireX™

• Select **CrossFireX™** in Advanced View.

Enable CrossFireX™

1. Click **CrossFireX™** in Advanced View.
2. Click **Enable CrossFireX™.**

When CrossFireX™ is successfully enabled all display devices, except the one used by CrossFireX™, will be disabled.

Note: *CrossFireX™ Higher Quality anti-aliasing can be adjusted in the Catalyst® Control Center 3D settings aspect.*

APPENDIX B
CrossFire™ FAQ

1. **What combination of products are required to build a working CrossFire™ system?**

   Three components are required:
   - a CrossFire™ Edition graphics card that works as the Master graphics card.
   - a CrossFire™ Ready graphics card from the same brand-family that works as the Slave graphics card.
   - a CrossFire™ Ready motherboard (which contains two PCIe™ X16 slots).

2. **What graphics cards work with CrossFire™?**
   A CrossFire™ graphics card works with all members of the same brand-family. Thus a ATI Radeon™ HD 3800 CrossFire™ Edition can be used as the Master graphics card with any ATI Radeon™ HD 3800 product.

3. **What motherboard is required for a CrossFire system?**
   AMD 790FX, AMD 790X, CrossFire Xpress 3200, Radeon Xpress 200 CrossFire, Intel 955X, Intel 975X, Intel P965 and P35 based dual-slot motherboards are supported platforms.

4. **When will CrossFire Ready motherboards be available?**
   CrossFire Xpress 3200 and Radeon Xpress 200 CrossFire motherboards are available from our partners now.

5. **Are there specific CMOS motherboard settings for CrossFire™?**
   On some motherboards, the CMOS may be set by default to support only a single PCI Express® X16 slot. Ensure that both PCIe™ X16 slots are enabled in the CMOS.

6. **What happens when your CrossFire Edition card and and a compatible standard Radeon (CrossFire Ready) graphics card have different clock speeds?**
   Both cards will continue to operate at their individual clock speeds.

7. **What is the difference between a CrossFire™ Edition graphics card and a standard graphics card from the same family?**

   CrossFire™ Edition graphics cards include a "compositing engine," a chip that takes the partially rendered image from the Slave graphics card and merges it with the partially rendered image from the Master graphics card. The result is a complete frame rendered at up to twice the performance of a single graphics card.

8. **How are the graphics cards connected on a CrossFire™ system?**

   The two cards are connection by an external cable. The cable is attached from the Slave graphics card's DVI-I connection to the CrossFire™ Edition's VHDCI connection, which is used to convey information from the Slave graphics card to the Master graphics card and transmit the combined signal to a display device.

9. **Which games/applications work with CrossFire™?**

   CrossFire™ works with all 3D games and applications. If Catalyst® A.I. is enabled in the Catalyst® Control Center software, the optimal rendering mode available for the application is automatically selected.

10. **Are there any software settings required for CrossFire™ to work?**

    Yes, there is a setting in the Catalyst® Control Center that needs to be enabled for CrossFire™ to operate. When all of the hardware and software has been properly set up and installed, the following CrossFire™ aspect appears in Catalyst® Control Center:

    To access and enable CrossFire™ in Catalyst® Control Center, do the following:

    - Click **CrossFire™** in Advanced View. Then, select **Enable CrossFire™**.

    When CrossFire™ is successfully enabled, all display devices except the one used by CrossFire™ will be disabled. Multiple monitors/ displays that are disabled when CrossFire™ is enabled reappear after CrossFire™ is disabled.

11. **Is a driver profile required to make CrossFire™ work?**
    No. CrossFire™ is enabled by default for all 3D games and applications.

12. **What happens if you pair a 12-pipeline CrossFire™ Edition graphics card with a CrossFire™ Ready 16-pipeline graphics card?**

    In this scenario both graphics cards will operate as 12-pipeline graphics cards while in CrossFire™ mode.

13. **On what basis are different rendering modes chosen?**
    When Catalyst® A.I. is enabled in Catalyst® Control Center, it determines the optimal rendering mode to use, based on the application or game being used. The default rendering mode is dependant on both the hardware configuration and the application being run; typically it will be either Scissor or SuperTiling mode. If Catalyst® A.I. is not enabled, any Direct 3D® applications that are running on a system based on graphics cards with 16-pipeline graphics processors will use SuperTiling Mode.

14. **Can I use the CrossFire platform to drive multiple displays?**
    Yes, the CrossFire platform will work with ATI's SurroundView™ multi-monitor technology to enable up to 5 separate displays when not running in CrossFire mode.

(**This page was intentionally blank.)**